# Appendix I

## Noise and Vibration Impact Study

# 2311 N. HOLLYWOOD WAY SCEA
# CITY OF BURBANK, CALIFORNIA

## Noise and Vibration Impact Study

Prepared for

Maciel Medina, Associate Planner
City of Burbank
Community Development Department
150 North Third Street, Second Floor
Burbank, CA 91502-1264

July 2021

ESA

# 2311 N. HOLLYWOOD WAY SCEA
# CITY OF BURBANK, CALIFORNIA

## Noise and Vibration Impact Study

Prepared for

Maciel Medina, Associate Planner
City of Burbank
Community Development Department
150 North Third Street, Second Floor
Burbank, CA 91502-1264

July 2021


16755 Von Karman Avenue
Suite 200
Irvine, CA 92606
949.753.7001
esassoc.com

ESA

Bend
Camarillo
Delray Beach
Destin
Irvine
Los Angeles
Oakland
Orlando
Pasadena
Petaluma
Portland
Sacramento
San Diego
San Francisco
San José
Santa Monica
Sarasota
Seattle
Tampa



D20210195.00

# TABLE OF CONTENTS

# 2311 N. Hollywood Way SCEA
# Noise and Vibration Impact Study

## Appendix



## Figures



## Tables

# 2311 N. HOLLYWOOD WAY SCEA

# Noise and Vibration Impact Study

## 1. Introduction

The project-specific analysis provided in this report assesses whether the implementation of the proposed Project would have potentially significant noise or vibration impacts on existing noise- and vibration sensitive receptors in the Project vicinity.

### 1.1 Project Location

The Project Site, which consists of one legal lot (Assessor's Parcel Number [APN] No. 2463-001-019), is located at 2311 N. Hollywood Way. The Project Site is bound by Vanowen Street to the north, N. Hollywood Way to the east, Valhalla Drive to the south, and commercial uses and Valhalla Memorial Park to the west.

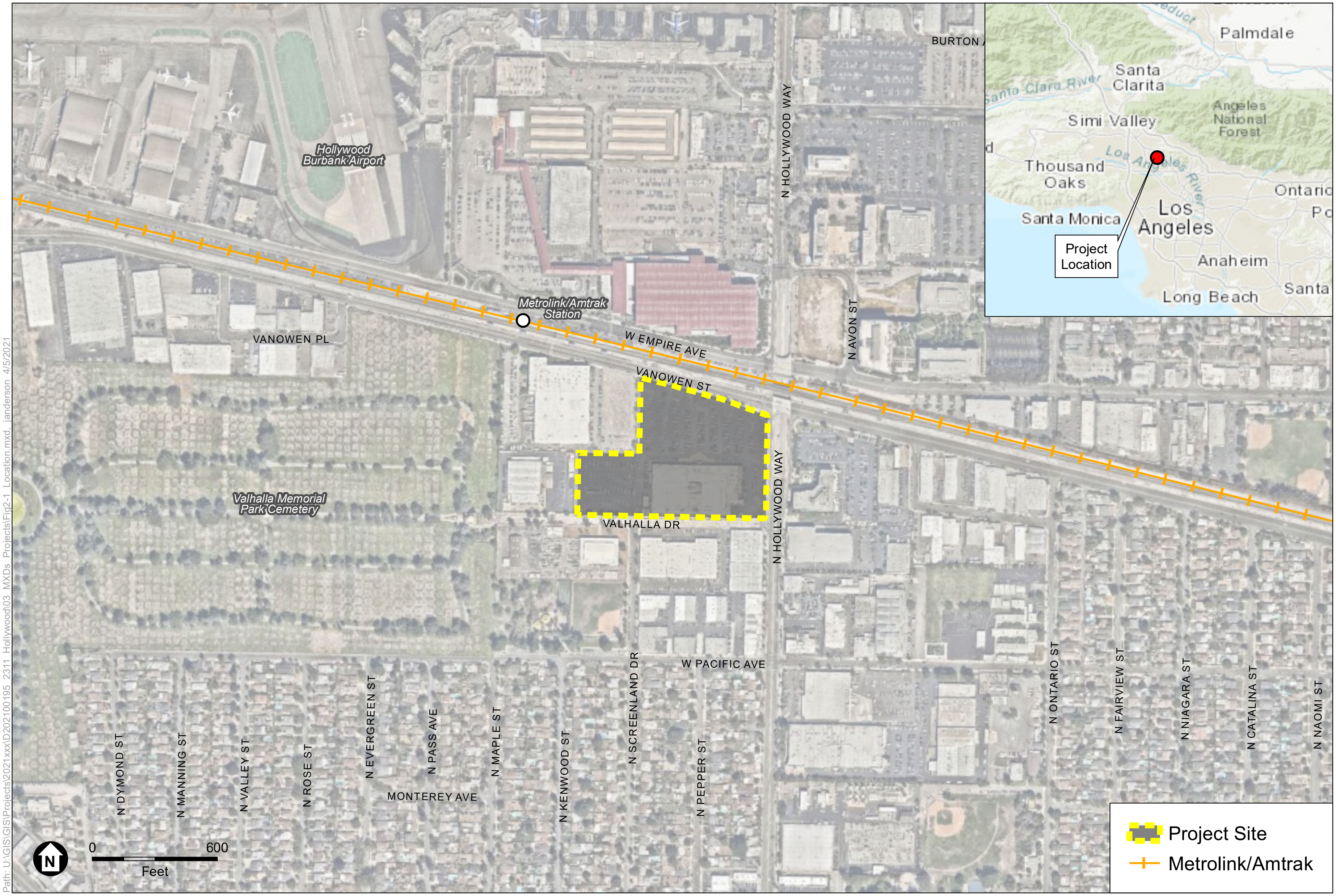
Local access is provided to the Project Site via Vanowen Street, N. Hollywood Way, and Valhalla Drive, which form the northern, eastern, and southern boundaries of the Project Site, respectively. Regional access to the Project Site is provided by Interstate 5 (I-5), which runs north–south, and is located approximately 1.14 miles east and 1.4 miles north of the Project Site; State Route 134 (SR 134), which runs east–west, and is located approximately 2.61 miles south of the Project Site; and State Route 170 (SR 170), which runs north–south, and is located approximately 3.02 miles west of the Project Site. The general vicinity and relationship of the Project Site to surrounding streets is illustrated in **Figure 1**, *Regional and Site Location Map*.

### 1.2 Existing Conditions

The Project Site is currently developed with a large commercial building that was constructed in 1962 and has housed the existing Fry's Electronics Store since 1995. Two additional ancillary structures are also located on the Project Site, including an abandoned heating, ventilation, and air conditioning (HVAC) system housing and a non-operational automotive stereo installation garage. Both ancillary structures located immediately to the west of the commercial building. The commercial building and ancillary structures located on the Project Site total approximately 105,626 square feet. The Project Site also includes a loading dock, associated surface parking and walkways, and ornamental landscaping. The Project Site is currently developed with approximately 45 on-site trees and 14 trees in the City's right-of-way.[1]

The Project Site is located within the Commercial General Business Zone (C-3) and has a General Plan Land Use Designation of Regional Commercial.

1 Carlberg Associates, *Tree Inventory Report 2311 Hollywood Way*, May 25, 2021 [provided as Appendix B to this SCEA].




SOURCE: Mapbox; Los Angeles County, 2020.

2311 N. Hollywood Way Project

**Figure 1**
Regional and Site Location Map

ESA

## 1.3 Project Description

The Project would construct a mixed-use development with office, commercial, and residential uses within four proposed buildings. **Figure 2**, *Conceptual Site Plan*, shows the proposed layout of the Project Site. As detailed in **Table 1**, *Proposed Development Program*, the Project would develop a total of approximately 937,613 square feet of office, commercial, and residential uses across the Project Site, as well as open publicly accessible areas.

# 2. Noise

## 2.1 Noise Principles and Descriptors

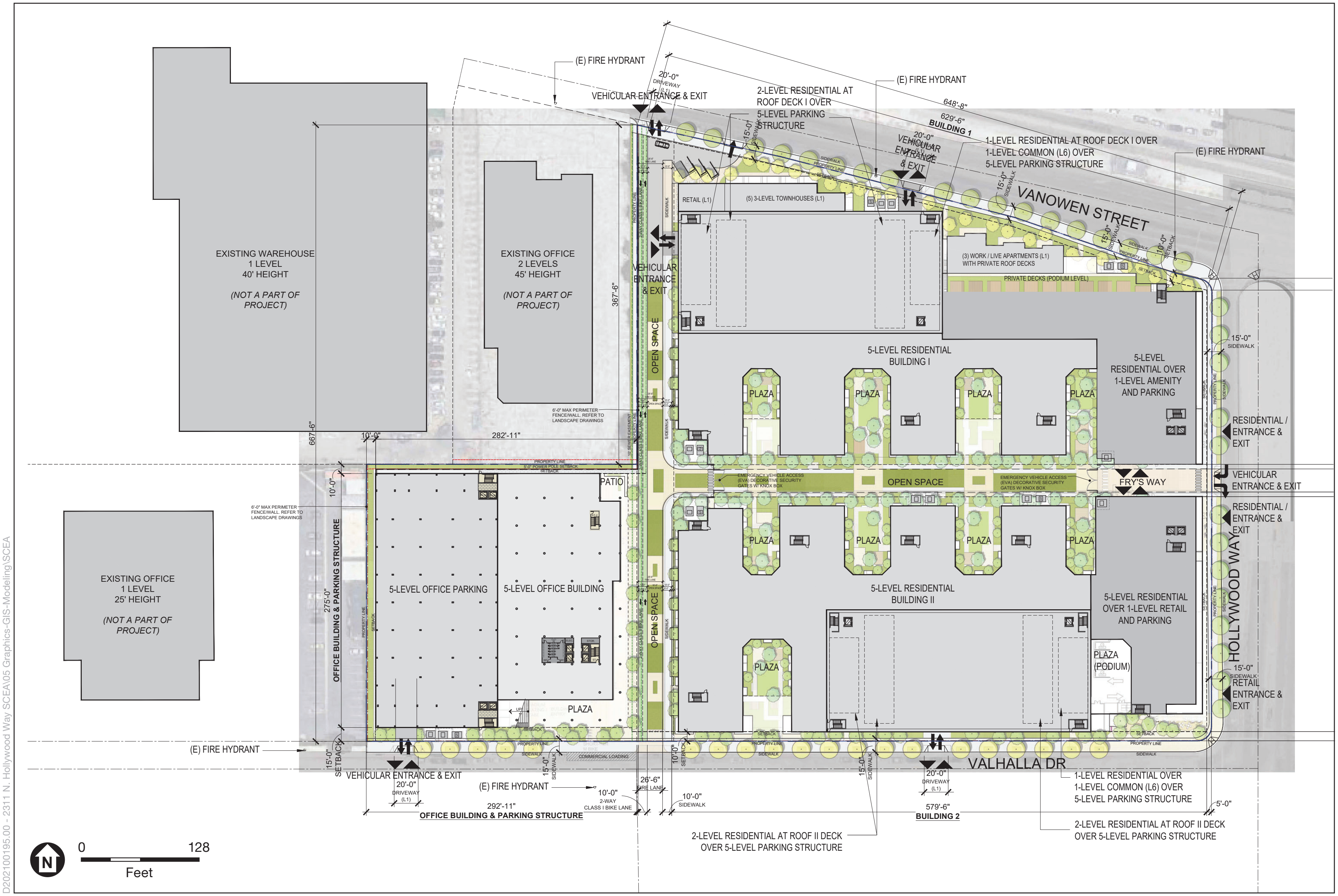
Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air). Noise is generally defined as unwanted sound (i.e., loud, unexpected, or annoying sound). Acoustics is defined as the physics of sound. In acoustics, the fundamental scientific model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions, or atmospheric factors affecting the propagation path to the receiver determines the sound level and characteristics of the noise perceived by the receiver. Acoustics addresses primarily the propagation and control of sound.[2]

Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) that is measured in decibels (dB), which is the standard unit of sound amplitude measurement. The dB scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound, with 0 dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of feeling and pain, respectively. Pressure waves traveling through air exert a force registered by the human ear as sound.[3]

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude, with audible frequencies of the sound spectrum ranging from 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.[4] The typical human ear is not equally sensitive to this frequency range. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that deemphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to these extremely low and extremely high frequencies. This method of frequency filtering, or weighting, is referred to as A-weighting, expressed in units of A-weighted decibels (dBA), which is typically applied to community noise measurements.[5]

---

[2] M. David Egan, *Architectural Acoustics*, 1988, Chapter 1.
[3] M. David Egan, *Architectural Acoustics*, 1988, Chapter 1.
[4] M. David Egan, *Architectural Acoustics*, 1988, Chapter 1.
[5] M. David Egan, *Architectural Acoustics*, 1988, Chapter 1.




SOURCE: LaTerra Development, LLC, 2021

2311 N. Hollywood Way Project

**Figure 2**
Conceptual Site Plan

ESA

**TABLE 1**
**PROPOSED DEVELOPMENT PROGRAM**

| | Total Square Footage (Across Project Site) |
|---|---|
| **Uses** | |
| **Non-Residential Uses** | |
| Office | 151,800 square feet |
| Commercial | 9,700 square feet |
| *Subtotal Non-residential Uses* | *161,500 square feet* |
| **Residential Uses** | |
| Studio (338 units) | 171,450 square feet |
| 1-Bedroom (364 units) | 280,614 square feet |
| 1-Bedroom Live/Work (1 unit) | 1,900 square feet |
| 2-Bedroom (128 units) | 146,178 square feet |
| 2-Bedroom Live/Work (5 units) | 8,681 square feet |
| 3-Bedroom (20 units) | 28,000 square feet |
| 3-Bedroom Townhouse (6 units) | 10,380 square feet |
| Common Amenities | 11,000 square feet |
| Residential Lobbies | 4,510 square feet |
| Circulation | 113,400 square feet |
| *Subtotal Residential Uses* | *862 units \| 776,113 square feet* |
| ***Total Uses*** | ***937,613 square feet*** |
| **Vehicle Parking** | |
| Residential Required per BMC | 431 vehicle parking spaces |
| Residential Provided[a] | 1,125 vehicle spaces |
| Restaurant Required per BMC | 32 vehicle parking spaces |
| Restaurant Provided | 32 vehicle parking spaces |
| Office Required | 456 vehicle parking spaces |
| Office Provided | 456 vehicle parking spaces |
| Total Required per BMC | 919 vehicle parking spaces |
| ***Total Spaces Provided*** | ***1,613 vehicle parking spaces*** |
| **Open Space** | |
| East–West Paseo | 9,000 square feet |
| North–South Paseo | 8,000 square feet |
| Three (3) Courtyards on Level 2 Podium and Deck | 10,000 square feet |
| Two (2) Residential Pool Decks on Level 6 | 34,000 square feet |
| Plazas on Level 1 | 27,000 square feet |
| Private Open Space (Balconies) | 43,100 square feet |
| ***Total Open Space Provided*** | ***131,100 square feet*** |

SOURCE: Urban Architecture Lab, 2021.

NOTE:

[a] The Project Applicant has elected, pursuant to Assembly Bill [AB] 2345, to provide 1,125 residential parking spaces.

## 2.2 Noise Exposure and Community Noise

An individual's noise exposure is a measure of noise over a period of time; a noise level is a measure of noise at a given instant in time. However, noise levels rarely persist at one level over a long period of time. Rather, community noise varies continuously over a period of time with respect to the sound sources contributing to the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with many of the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources, such as changes in traffic volume. What makes community noise variable throughout a day, besides the slowly changing background noise, is the addition of short-duration, single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual.[6]

These successive additions of sound to the community noise environment change the community noise level from instant to instant, requiring the noise exposure to be measured over periods of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. The following noise descriptors are used to characterize environmental noise levels over time, which are applicable to the project:[7]

$L_{eq}$: The equivalent sound level, is used to describe noise over a specified period of time in terms of a single numerical value; the $L_{eq}$ of a time-varying signal and that of a steady signal are the same if they deliver the same acoustic energy over a given time. The $L_{eq}$ may also be referred to as the average sound level.

$L_{max}$: The maximum, instantaneous noise level experienced during a given period of time.

$L_{min}$: The minimum, instantaneous noise level experienced during a given period of time.

$L_x$: The noise level exceeded a percentage of a specified time period. For instance, $L_{50}$ and $L_{90}$ represent the noise levels that are exceeded 50 percent and 90 percent of the time, respectively.

$L_{dn}$: The average A-weighted noise level during a 24-hour day, obtained after an addition of 10 dB to measured noise levels between the hours of 10 p.m. to 7 a.m. to account nighttime noise sensitivity. The $L_{dn}$ is also termed the day-night average noise level (DNL).

CNEL: The Community Noise Equivalent Level (CNEL) is the average A-weighted noise level during a 24-hour day that is obtained after an addition of 5 dB to measured noise levels between the hours of 7 p.m. to 10 p.m. and after an addition of 10 dB to noise levels between the hours of 10 p.m. to 7 a.m. to account for noise sensitivity in the evening and nighttime, respectively. CNEL and $L_{dn}$ are close to each other, with CNEL being more stringent and generally 1 dB higher than $L_{dn}$.

---

6 California Department of Transportation (Caltrans), *Technical Noise Supplement (TeNS)*, September 2013, Section 2.2.2.1.

7 Caltrans, *TeNS*, September 2013, Section 2.2.2.2.

## 2.3 Effects of Noise on People

Noise is generally loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity that is a nuisance, or disruptive. The effects of noise on people can be placed into four general categories:

- Subjective effects (e.g., dissatisfaction, annoyance);
- Interference effects (e.g., communication, sleep, and learning interference);
- Physiological effects (e.g., startle response); and
- Physical effects (e.g., hearing loss).

Although exposure to high noise levels has been demonstrated to cause physical and physiological effects, the principal human responses to typical environmental noise exposure are related to subjective effects and interference with activities. Interference effects interrupt daily activities and include interference with human communication activities, such as normal conversations, watching television, telephone conversations, and interference with sleep. Sleep interference effects can include both awakening and arousal to a lesser state of sleep.[8]

With regard to the subjective effects, the responses of individuals to similar noise events are diverse and influenced by many factors, including the type of noise, the perceived importance of the noise, the appropriateness of the noise to the setting, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity. Overall, there is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction on people. A wide variation in individual thresholds of annoyance exists, and different tolerances to noise tend to develop based on an individual's past experiences with noise. Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted (i.e., comparison to the ambient noise environment). In general, the more a new noise level exceeds the previously existing ambient noise level, the less acceptable the new noise level will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships generally occur:[9]

- Except in carefully controlled laboratory experiments, a change of 1 dBA in ambient noise levels cannot be perceived;
- Outside of the laboratory, a 3 dBA change in ambient noise levels is considered to be a barely perceivable difference;
- A change in ambient noise levels of 5 dBA is considered to be a readily perceivable difference; and
- A change in ambient noise levels of 10 dBA is subjectively heard as doubling of the perceived loudness.

---

8 Caltrans, *TeNS*, September 2013, Section 2.2.1.
9 Caltrans, *TeNS*, September 2013, Section 2.2.1.

These relationships occur in part because of the logarithmic nature of sound and the decibel scale. The human ear perceives sound in a non-linear fashion; therefore, the dBA scale was developed. Because the dBA scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but rather logarithmically. Under the dBA scale, a doubling of sound energy corresponds to a 3 dBA increase. In other words, when two sources are each producing sound of the same loudness, the resulting sound level at a given distance would be approximately 3 dBA higher than one of the sources under the same conditions. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA. Three sources of equal loudness together produce a sound level of approximately 5 dBA louder than one source, and 10 sources of equal loudness together produce a sound level of approximately 10 dBA louder than the single source.[10]

## 2.4 Noise Attenuation

When noise propagates over a distance, the noise level reduces with distance depending on the type of noise source and the propagation path. Noise from a localized source (i.e., point source) propagates uniformly outward in a spherical pattern, referred to as “spherical spreading.” Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (i.e., reduce) at a rate between 6 dBA for acoustically “hard” sites and 7.5 dBA for “soft” sites for each doubling of distance from the reference measurement, as their energy is continuously spread out over a spherical surface (e.g., for hard surfaces, 80 dBA at 50 feet attenuates to 74 at 100 feet, 68 dBA at 200 feet, etc.). Hard sites are those with a reflective surface between the source and the receiver, such as asphalt, or concrete, surfaces, or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the reduction in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees, which in addition to geometric spreading, provides an excess ground attenuation value of 1.5 dBA (per doubling distance).[11]

Roadways and highways consist of several localized noise sources on a defined path, and hence are treated as “line” sources, which approximate the effect of several point sources. Noise from a line source propagates over a cylindrical surface, often referred to as “cylindrical spreading.”[12] Line sources (e.g., traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement.[13] Therefore, noise due to a line source attenuates less with distance than that of a point source with increased distance.

Additionally, receptors located downwind from a noise source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Atmospheric temperature inversion (i.e., increasing temperature with elevation) can increase

10 Caltrans, *TeNS*, September 2013, Section 2.2.1.1.
11 Caltrans, *TeNS*, September 2013, Section 2.1.4.2.
12 Caltrans, *TeNS*, September 2013, Section 2.1.4.1.
13 Caltrans, *TeNS*, September 2013, Section 2.1.4.1.

sound levels at long distances (e.g., more than 500 feet). Other factors such as air temperature, humidity, and turbulence can also have significant effects on noise levels.[14]

# 3. Vibration

## 3.1 Fundamentals of Vibration

Vibration refers to groundborne noise and perceptible motion. Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors. The motion may be discernible outdoors, but without the effects associated with the shaking of a building, there is less adverse reaction. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by the occupants as the motion of building surfaces, the rattling of items moving on shelves or hanging on walls, or as a low-frequency rumbling noise. The rumbling noise is caused by the vibrating walls, floors, and ceilings that are radiating sound waves. However, building damage is not a factor for normal transportation projects, except for occasional blasting and pile driving during construction. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 VdB or less. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of groundborne vibration are construction activities (e.g., blasting, pile driving, and operating heavy-duty earth-moving equipment), steel-wheeled trains, and occasional traffic on rough roads. Problems with groundborne vibration and noise from these sources are usually localized to areas within approximately 100 feet of the vibration source, although there are examples of groundborne vibration causing interference out to distances greater than 200 feet (FTA 2018). When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. It is assumed, for most projects, that the roadway surface will be smooth enough that groundborne vibration from street traffic will not exceed the impact criteria; however, construction of the project could result in groundborne vibration that could be perceptible and annoying. Groundborne noise is not likely to be a problem as noise arriving via the normal airborne path usually will be greater than groundborne noise.

Groundborne vibration has the potential to disturb people as well as to damage buildings. Although it is very rare for mobile source-induced groundborne vibration to cause even cosmetic building damage, it is not uncommon for construction processes such as blasting and the pile driving to cause vibration of sufficient amplitudes to damage nearby buildings (FTA 2018). Groundborne vibration is usually measured in terms of vibration velocity, either the root-mean-square (RMS) velocity or peak particle velocity (PPV). RMS is best for characterizing human response to building vibration, and PPV is used to characterize potential for damage. Decibel

[14] Caltrans, *TeNS*, September 2013, Section 2.1.4.3.

notation acts to compress the range of numbers required to describe vibration. Vibration velocity level in decibels is defined as:

$L_v = 20 \log_{10} [V/V_{ref}]$

where $L_v$ is the VdB, "V" is the RMS velocity amplitude, and "$V_{ref}$" is the reference velocity amplitude, or $1x10^{-6}$ inches per second (inch/sec) used in the United States.

Factors that influence groundborne vibration and noise include the following:

**Vibration Source:** Vehicle/equipment suspension, wheel types and condition, track/roadway surface, track support system, speed, transit structure, and depth of vibration source

**Vibration Path:** Soil type, rock layers, soil layering, depth to water table, and frost depth

**Vibration Receiver:** Foundation type, building construction, and acoustical absorption

Among the factors listed above, there are significant differences in the vibration characteristics when the source is underground compared to at the ground surface. In addition, soil conditions are known to have a strong influence on the levels of groundborne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to bedrock.

Experience with groundborne vibration shows that vibration propagation is more efficient in stiff clay soils than in loose sandy soils, and shallow rock seems to concentrate the vibration energy close to the surface, resulting in groundborne vibration problems at large distance from the source. Factors such as layering of the soil and depth to water table can have significant effects on the propagation of groundborne vibration. Soft, loose, sandy soils tend to attenuate more vibration energy than hard, rocky materials. Vibration propagation through groundwater is more efficient than through sandy soils.

# 4. Existing Conditions

Some land uses are considered more sensitive to ambient noise levels than others are, due to the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved. Residential areas are considered to be the most sensitive type of land use to noise and industrial/commercial areas are considered to be the least sensitive.

## 4.1 Ambient Noise Levels

Ambient noise measurements were taken at six locations, representing the nearby land uses in the vicinity of the Project Site to establish conservative ambient noise levels. The measurement locations, along with existing development, are shown on **Figure 3**, *Noise Measurement Locations*. Short-term (15-minute) noise measurements were taken at locations R1 through R2 on April 6th, 2021.

The ambient noise measurements were conducted using the Larson-Davis 820 Precision Integrated Sound Level Meter (SLM). The Larson-Davis 820 SLM is a Type 1 standard instrument as defined in the American National Standard Institute S1.4. All instruments were calibrated and operated according to the applicable manufacturer specification. The microphone was placed at a height of 5 feet above the local grade, at the following locations as shown in Figure 3:

**Measurement Location R1:** This measurement location represents the existing noise environment of the area to the west, adjacent to Valhalla Memorial Park. The sound level meter was placed at the end of Valhalla Drive adjacent to the cemetery. The distance to project site varies from 380 to 1,300 feet, depending on the area with construction equipment in each phase.

**Measurement Location R2:** This measurement location represents the area to the southwest of the Project Site, adjacent to residences on W. Pacific Avenue. The sound level meter was placed on the sidewalk of W. Pacific Avenue. The distance to project site varies from 700 to 1,400 feet, depending on the area with construction equipment in each phase.

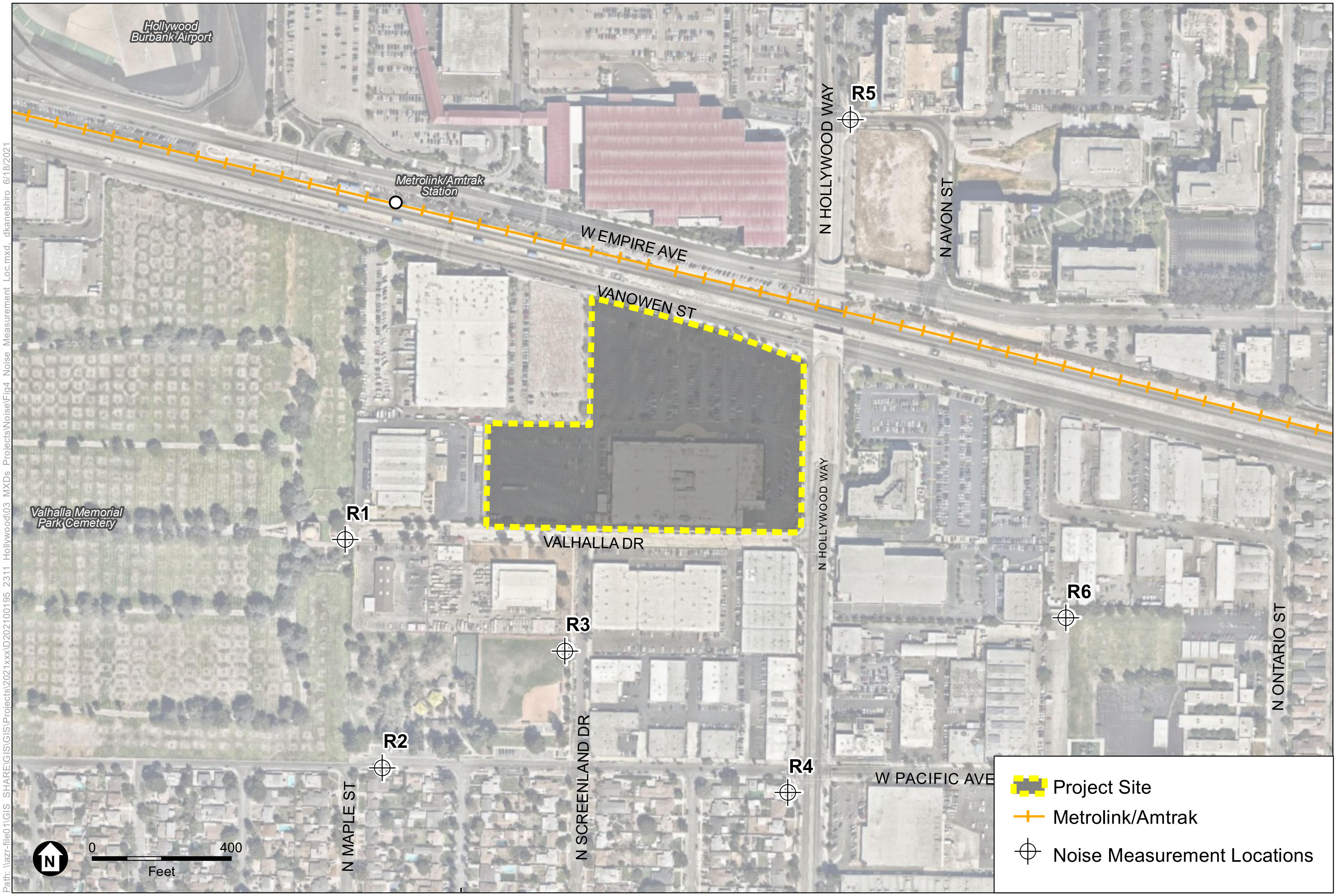
**Measurement Location R3:** This measurement location represents the existing noise environment in the area to the south of the Project Site along N. Screenland Drive. The sound level meter was placed at the sidewalk of N. Screenland Drive next to the baseball field at the Larry Maxam Memorial Park. The distance to project site varies from 330 to 990 feet, depending on the area with construction equipment in each phase.

**Measurement Location R4:** This measurement location represents the existing noise environment at the corner of N. Hollywood Way and W. Pacific Avenue, southeast of the Project Site. The sound level meter was placed at the southwestern corner of the intersection, adjacent to existing residences. The distance to project site varies from 700 to 1,200 feet, depending on the area with construction equipment in each phase.

**Measurement Location R5:** This measurement location represents the existing noise environment of a hotel (Los Angeles Marriott Burbank Airport) to the northeast of the Project Site along N. Hollywood Way. The sound level meter was placed at the sidewalk of N. Hollywood Way next to the hotel. The distance to project site varies from 715 to 1,500 feet, depending on the area with construction equipment in each phase.

**Measurement Location R6:** This measurement location represents the existing noise environment of an elementary school (Providencia Elementary School) to the southeast of the Project Site along W. Pacific Avenue. The sound level meter was placed at the northwest corner of the elementary school. The distance to project site varies from 820 to 1,800 feet, depending on the area with construction equipment in each phase.

A summary of noise measurement data is provided in **Table 2**, *Summary of Ambient Noise Measurements*. Daytime noise levels ranged from 49.8 dBA to 71.1 dBA $L_{eq}$. The $L_{eq}$ and $L_{max}$ measurements at Measurement Location R2 are not representative of typical ambient noise level due to street resurfacing work during noise measurement period. As a result, the ambient noise level from measurement location R4 has been utilized for impact analyses below. Measurement location R4 is representative of location R2 because both are located on the same roadway (W. Pacific Avenue), would be exposed to aircraft noise from the Airport, within similar proximity to the railroad, and adjacent to residential uses.




SOURCE: Mapbox; Los Angeles County, 2021.

2311 N. Hollywood Way Project

**Figure 3**
Noise Measurement Locations

ESA

**TABLE 2**
**SUMMARY OF AMBIENT NOISE MEASUREMENTS**

| Location, Duration, Existing Land Uses, and, Date of Measurements | Measured Ambient Noise Levels (dBA)[a] | | |
|---|---|---|---|
| | $L_{eq}$ | Lmax | Lmin |
| R1, 4/6/21 (9:33 a.m. to 9:48 a.m.) | 49.9 | 63.2 | 46.2 |
| R2, 4/6/21 (11:24 a.m. to 11:31 a.m.)[b] | 82.8 | 98.8 | 47.8 |
| R3, 4/6/21 (11:06 a.m. to 11:21 a.m.) | 63.7 | 83.3 | 44.9 |
| R4, 4/6/21 (9:56 a.m. to 10:11 a.m.) | 70.9 | 86.9 | 52.2 |
| R5, 4/6/21 (10:43 a.m. to 10:58 a.m.) | 71.1 | 89.0 | 58.3 |
| R6, 4/6/21 (10:16 a.m. to 10:31 a.m.) | 49.8 | 59.1 | 46.9 |

SOURCE: ESA, 2021.

NOTES:

a Detailed measured noise data is included in Appendix A.

b Not representative of typical ambient noise level due to street resurfacing work during noise measurement period. As a result, the ambient noise level from measurement location R4, which is representative of R2, has been utilized for impact analyses herein.

# 5. Regulatory Setting

A number of statutes, regulations, plans, and policies that address noise concerns have been adopted. Below is a discussion of the relevant regulatory setting and noise regulations, plans, and policies.

## 5.1 Noise

### Federal

Under the authority of the Noise Control Act of 1972, USEPA established noise emission criteria and testing methods published in Parts 201 through 205 of Title 40 of the Code of Federal Regulations (CFR) that apply to some transportation equipment (e.g., interstate rail carriers, medium trucks, and heavy trucks) and construction equipment. In 1974, the USEPA issued guidance levels for the protection of public health and welfare in residential land use areas25 of an outdoor Ldn of 55 dBA and an indoor Ldn of 45 dBA. These guidance levels are not considered as standards or regulations, and were developed without consideration of technical or economic feasibility.

There are no federal noise standards that directly regulate environmental noise related to the construction or operation of the project. Under the Occupational Safety and Health Act of 1970 (29 U.S.C. Section 1919 et seq.), the Occupational Safety and Health Administration (OSHA) has adopted regulations designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise level exposure as a function of the amount of time during which the worker is exposed. The regulations further specify a hearing conservation program that involves monitoring the noise to which workers are exposed, ensuring that workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation.

## State

The State of California does not have statewide standards for environmental noise, but the California Department of Health Services (DHS) has established guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The purpose of these guidelines is to maintain acceptable noise levels in a community setting for different land use types. Noise compatibility by different land uses types is categorized into four general levels: "normally acceptable," "conditionally acceptable," "normally unacceptable," and "clearly unacceptable." For instance, a noise environment ranging from 50 dBA CNEL to 65 dBA CNEL is considered to be "normally acceptable" for multi-family residential uses, while a noise environment of 75 dBA CNEL or above for multi-family residential uses is considered to be "clearly unacceptable."

In addition, California Government Code Section 65302(f) requires each county and city in the State to prepare and adopt a comprehensive long-range general plan for its physical development, with Section 65302(g) requiring a noise element to be included in the general plan. The noise element must: (1) identify and appraise noise problems in the community; (2) recognize Office of Noise Control guidelines; and (3) analyze and quantify current and projected noise levels. The state has also established noise insulation standards for new multi-family residential units, hotels, and motels that would be subject to relatively high levels of transportation-related noise. These requirements are collectively known as the California Noise Insulation Standards (Title 24, California Code of Regulations). The noise insulation standards set forth an interior standard of 45 dBA CNEL in any habitable room. They require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than 60 dBA CNEL. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

## Local

The proposed project is located within the County of Los Angeles, in the City of Burbank. Applicable noise standards and policies are described below.

### *City of Burbank General Plan Noise Element*

The California Government Code Section 65302(g) requires that a noise element be included in the General Plan of each county and city in the state. The Noise Element of the City of Burbank General Plan is intended to identify sources of noise and provide objectives and policies that ensure that noise from various sources does not create an unacceptable noise environment. Overall, the City's Noise Element describes the noise environment (including noise sources) in the City, addresses noise mitigation regulations, strategies, and programs as well as delineating federal, state, and City jurisdiction relative to rail, automotive, aircraft, and nuisance noise.

The City's noise standards are correlated with land use zoning classifications in order to maintain identified ambient noise levels and to limit, mitigate, or eliminate intrusive noise that exceeds the ambient noise levels within a specified zone. The City has adopted local guidelines based, in part, on the community noise compatibility guidelines established by the DHS for use in assessing the compatibility of various land use types with a range of noise levels. The City's noise/land use compatibility guidelines for land uses are shown in **Table 3**, *Maximum Allowable Noise Exposure—Transportation Sources*. These criteria are the basis for the development of specific Noise Standards.

**TABLE 3**
**MAXIMUM ALLOWABLE NOISE EXPOSURE—TRANSPORTATION SOURCES**

| Land Use Category | Exterior Normally Acceptable[a] (dBA CNEL/Ldn) | Exterior Possibly Acceptable[b] (dBA CNEL/Ldn) | Exterior Normally Unacceptable[c] (dBA CNEL/Ldn) | Interior Acceptable[d] (dBA CNEL/Ldn except where noted) |
|---|---|---|---|---|
| Residential, single-family | Up to 60 | 61–70 | 71 and higher | 45 |
| Residential, multi-family | Up to 65 | 66–70 | 71 and higher | 45 |
| Residential, multi-family mixed-use | Up to 65 | 66–70 | 71 and higher | 45 |
| Transient lodging | Up to 65 | 66–70 | 71 and higher | 45 |
| Hospitals; nursing homes | Up to 60 | 61–70 | 71 and higher | 45 |
| Theaters; auditoriums; music halls | Up to 60 | 61–70 | 71 and higher | 35 dBA Leq[e] |
| Churches; meeting halls | Up to 60 | 61–70 | 71 and higher | 40 dBA Leq |
| Playgrounds; neighborhood parks | Up to 70 | 71–75 | 75 and higher | — |
| Schools; libraries; museums[f] | — | — | — | 45 dBA Leq |
| Offices[g] | — | — | — | 45 dBA Leq |
| Retail/commercial[g] | — | — | — | — |
| Industrial | — | — | — | — |

SOURCES: Burbank 2035, February 2013.

NOTES:

[a] Normally acceptable means that land uses may be established in areas with the stated ambient noise level, absent any unique noise circumstances.
[b] Possibly acceptable means that land uses should be established in areas with the stated ambient noise level only when exterior areas are omitted from the project or noise levels in exterior areas can be mitigated to the normally acceptable level.
[c] Normally unacceptable means that land uses should generally not be established in areas with the stated ambient noise level. If the benefits of the project in addressing other Burbank2035 goals and policies outweigh concerns about noise, the use should be established only where exterior areas are omitted from the project or where exterior areas are located and shielded from noise sources to mitigate noise to the maximum extent feasible.
[d] Interior acceptable means that the building must be constructed so that interior noise levels do not exceed the stated maximum, regardless of the exterior noise level. Stated maximums are as determined for a typical worst-case hour during periods of use.
[e] dBA Leq is as determine for a typical worst-case hour during periods of use.
[f] Within the Airport Influence Area, these uses are not acceptable above 65 dBA CNEL if subject to the City's discretionary review procedures.
[g] Within the Airport Influence Area, these uses may be acceptable up to 75 dBA CNEL following review for additional noise attenuation; in excess of 75 dBA CNEL these uses are not acceptable.

In addition, the following objectives and policies from the City's General Plan Noise Element are applicable to the proposed project:

> **Goal 1:** Noise Compatible Land Uses: Burbank's diverse land use pattern is compatible with current and future noise levels.
>
> > ***Policy 1.1:*** Ensure the noise compatibility of land uses when making land use planning decisions.

***Policy 1.2:*** Provide spatial buffers in new development projects to separate excessive noise generating uses from noise-sensitive uses.

***Policy 1.3:*** Incorporate design and construction features into residential and mixed-use projects that shield residents from excessive noise.

***Policy 1.4:*** Maintain acceptable noise levels at existing noise-sensitive land uses.

***Policy 1.5:*** Reduce noise from activity centers located near residential areas, in cases where noise standards are exceeded.

***Policy 1.6:*** Consult with movie studios and residences that experience noise from filming activities to maintain a livable environment.

**Goal 2:** Noise in Mixed-Use Development: Noise from commercial activity is reduced in residential portions of mixed-use projects.

***Policy 2.1:*** Require the design and construction of buildings to minimize commercial noise within indoor areas of residential components of mixed-use projects.

***Policy 2.2:*** Locate the residential portion of new mixed-use projects away from noise generating sources such as mechanical equipment, gathering places, loading bays, parking lots, driveways, and trash enclosures.

**Goal 3:** Vehicular Traffic Noise: Burbank's vehicular transportation network reduces noise levels affecting sensitive land uses.

***Policy 3.1:*** Support noise-compatible land uses along existing and future roadways, highways, and freeways.

***Policy 3.2:*** Encourage coordinated site planning and traffic management that minimize traffic noise affecting noise-sensitive land uses.

***Policy 3.3:*** Advocate the use of alternative transportation modes such as walking, bicycling, mass transit, and non-motorized vehicles to minimize traffic noise.

***Policy 3.4:*** Install, maintain, and renovate freeway and highway right-of-way buffers and sound walls through continued work with Caltrans and Los Angeles County Metropolitan Transportation Authority (MTA).

***Policy 3.5:*** Monitor noise levels in residential neighborhoods and reduce traffic noise exposure through implementation of the neighborhood protection plans.

***Policy 3.6:*** Prohibit heavy trucks from driving through residential neighborhoods.

***Policy 3.7:*** Where feasible, employ noise-cancelling technologies such as rubberized asphalt, fronting homes to the roadway, or sound walls to reduce the effects of roadway noise on sensitive receptors.

***Policy 3.8:*** Within the Airport Influence Area, seek to inform residential property owners of airport generated noise and any land use restrictions associated with high noise exposure. Mixed-use development contributes to a thriving community, but can place sensitive receptors adjacent to noisy businesses.

**Goal 4:** Train Noise: Burbank's train service network reduces noise levels affecting residential areas and noise-sensitive land uses.

***Policy 4.1:*** Support noise-compatible land uses along rail corridors.

***Policy 4.2:*** Require noise-reducing design features as part of transit-oriented, mixed-use development located near rail corridors.

***Policy 4.3:*** Promote the use of design features, such as directional warning horns or strobe lights, at railroad crossings that reduce noise from train warnings.

**Goal 5:** Aircraft Noise: Burbank achieves compatibility between airport-generated noise and adjacent land uses and reduces aircraft noise effects on residential areas and noise-sensitive land uses.

***Policy 5.1:*** Prohibit incompatible land uses within the airport noise impact area.

***Policy 5.2:*** Work with regional, state, and federal agencies, including officials at Bob Hope Airport, to implement noise reduction measures and to monitor and reduce noise associated with aircraft.

***Policy 5.3:*** Coordinate with the Federal Aviation Administration and Caltrans Division of Aeronautics regarding the siting and operation of heliports and helistops to minimize excessive helicopter noise.

***Policy 5.4:*** Within the Airport Influence Area, seek to inform residential property owners of airport generated noise and any land use restrictions associated with high noise exposure.

**Goal 6:** Industrial Noise: Noise generated by industrial activities is reduced in residential areas and at noise-sensitive land uses.

***Policy 6.1:*** Minimize excessive noise from industrial land uses through incorporation of site and building design features.

***Policy 6.2:*** Require industrial land uses to locate vehicular traffic and operations away from adjacent residential areas.

**Goal 7:** Construction, Maintenance, and Nuisance Noise: Construction, maintenance, and nuisance noise is reduced in residential areas and at noise-sensitive land uses.

***Policy 7.1:*** Avoid scheduling city maintenance and construction projects during evening, nighttime, and early morning hours.

***Policy 7.2:*** Require project applicants and contractors to minimize noise in construction activities and maintenance operations.

***Policy 7.3:*** Limit the allowable hours of construction activities and maintenance operations located adjacent to noise-sensitive land uses.

***Policy 7.4:*** Limit the allowable hours of operation for and deliveries to commercial, mixed-use, and industrial uses located adjacent to residential areas.

### *City of Burbank Municipal Code*

The City's noise standards found in Chapter 9-3-208 and Chapter 9-1-1-105.8 of the City of Burbank Municipal Code (BMC), set forth sound measurement criteria, minimum ambient noise levels for different land use zoning classifications, sound emission levels for specific uses, hours of operation for certain uses, standards for determining when noise is deemed to be a disturbance, and legal remedies for violations. The City Noise Regulation establishes acceptable ambient sound levels to regulate intrusive noises (e.g., stationary mechanical equipment) within specific land use zones. In accordance with the Noise Regulation, a noise level from any machinery, equipment, pump, fan, air conditioning apparatus, or similar mechanical device in such a manner would exceed 5 dBA over the ambient noise level at an adjacent property line is considered a noise violation. The City's noise standards establish the ambient noise base levels in the zones and during the times as shown in **Table 4**, *Maximum Allowable Noise Exposure—Stationary Noise Sources*.

**TABLE 4**
**MAXIMUM ALLOWABLE NOISE EXPOSURE—STATIONARY NOISE SOURCES**

| Noise Source | Noise Level Descriptor | Exterior Spaces[a] —Daytime (7 a.m. to 10 p.m.) | Exterior Spaces[a] —Nighttime (10 p.m. to 7 a.m.) |
|---|---|---|---|
| Typical | Hourly dBA $L_{eq}$ | 55[b] | 45[b] |
| Tonal, impulsive, repetitive, or consisting primarily of speech or music | Hourly dBA $L_{eq}$ | 50[b] | 40[b] |
| Any | dBA Lmax | 75 | 65 |

SOURCE: City of Burbank, Burbank2035 General Plan, Noise Element, adopted February 19, 2013, https://www.burbankca.gov/documents/173607/0/Burbank2035+General+Plan.pdf/139656b0-80e9-3b11-dc6d-751642c85b38?t=1616616672474, accessed June 15, 2021.

NOTES:

a Where the location of exterior spaces (i.e., outdoor activity areas) is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use. Where it is not practical to mitigate exterior noise levels at patio or balconies of apartment complexes, a common area such as a pool or recreation area may be designated as the exterior space.

b The City may impose noise level standards that are more or less restrictive than those specified above based upon determination of existing low or high ambient noise levels.

According to Section 9-3-208, when the ambient noise base level for the property on which the machinery, equipment, pump, fan, air conditioning apparatus or similar mechanical device is located is higher than the ambient noise base level for adjacent property, the ambient noise base levels for the adjacent property shall apply. Properties separated by a street shall be deemed to be adjacent to one another. Chapter 9-1-1-105.8 of the BMC prohibits construction activity which would create disturbing, excessive, or offensive noise between 7 p.m. and 7 a.m. Monday through Friday, between 5 p.m. and 8 a.m. on Saturdays, and at any time on Sundays or national holidays. The Community Development Director, Planning Board, or City Council may grant exceptions pursuant to land use entitlements or wherever there are practical difficulties involved in carrying out the provisions of the above mentioned chapter or other specific onsite activity that warrants unique consideration.

## 5.2 Vibration

The FTA has published data on vibration levels in its 2018 Transit Noise and Vibration Impact Assessment that are used to evaluate potential building damage impacts related to construction activities. The vibration damage criteria adopted by the FTA are shown in **Table 5**, *Construction Vibration Damage Criteria*.

**TABLE 5**
**CONSTRUCTION VIBRATION DAMAGE CRITERIA**

| Building Category | PPV (inch/sec) | Approximate $L_V$[a] |
|---|---|---|
| Reinforced-concrete, steel or timber (no plaster) | 0.50 | 102 |
| Engineered concrete and masonry (no plaster) | 0.30 | 98 |
| Non-engineered timber and masonry buildings | 0.20 | 94 |
| Buildings extremely susceptible to vibration damage | 0.12 | 90 |

SOURCE: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, 2018, Table 7-5.
NOTES:
PPV = peak particle velocity; inch/sec = inches per second; $L_V$ = velocity in decibels; RMS = root-mean-square
[a] RMS velocity in decibels (VdB) re 1 μin/sec.

The vibration thresholds associated with human response to different levels of groundborne noise and vibration are shown in **Table 6**, *Human Response to Different Levels of Groundborne Noise and Vibration*.

**TABLE 6**
**HUMAN RESPONSE TO DIFFERENT LEVELS OF GROUNDBORNE NOISE AND VIBRATION**

| Vibration Velocity Level (VdB) | Noise Level (dBA) | | Human Response |
|---|---|---|---|
| | Low Frequency[a] | Mid Frequency[b] | |
| 65 | 25 | 40 | Approximate threshold of perception for many humans. Low-frequency sound usually inaudible, mid-frequency sound excessive for quiet sleeping areas. |
| 75 | 35 | 50 | Approximate dividing line between barely perceptible and distinctly perceptible. Many people find transit vibration at this level annoying. Low-frequency noise acceptable for sleeping areas, mid-frequency noise annoying in most quiet occupied areas. |
| 85 | 45 | 60 | Vibration acceptable only if there are an infrequent number of events per day. Low-frequency noise annoying for sleeping areas, mid-frequency noise annoying even for infrequent events with institutional land uses such as schools and churches. |

SOURCE: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, 2006, Table 7-1.
NOTES:
VdB = vibration velocity decibels; dBA = A-weighted decibels
[a] Approximate noise level when vibration spectrum peak is near 30 Hz.
[b] Approximate noise level when vibration spectrum peak is near 60 Hz.

# 6. Significance Thresholds

Pursuant to CEQA Guidelines Appendix G, the project would result in a significant impact related to noise and vibration if it would expose people to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

For the purposes of this analysis and consistency with CEQA Guidelines Appendix G, applicable local plans, and agency and professional standards, the project would have a significant impact to noise and/or ground-borne vibration if it would:

> Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
>
> Generate excessive ground-borne vibration or ground-borne noise levels; or
>
> Expose people residing or working in the project area to excessive noise levels (for a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport).

The proposed project would result in no impacts relevant to airport land use plans, airports, or private airstrips; therefore, these issues do not require further analysis in this study.

# 7. Methodology

## 7.1 On-Site Construction

On-site construction noise impacts were evaluated by determining the noise levels generated by the different types of construction activity anticipated, calculating the construction-related noise level generated by the mix of equipment assumed for all construction activities at nearby sensitive receptor locations, and comparing these construction-related noise levels to existing ambient noise levels (i.e., noise levels without construction noise) at those receptors. More specifically, the following steps were undertaken to assess construction-period noise impacts.

1. Ambient noise levels at surrounding sensitive receptor locations were determined based on field measurements (see Table 1, above). Ambient noise measurements were conducted using the Larson-Davis 820 Precision Integrated Sound Level Meter (sound meter). The Larson-Davis 820 sound meter is a Type 1 standard instrument as defined in the American National Standard Institute S1.4. All instruments were calibrated and operated according to the applicable manufacturer specification. The microphone was placed at a height of 5 feet above the local grade.
2. Typical noise levels for each type of construction equipment expected were obtained from the FHWA Roadway Construction Noise Model (RCNM).
3. Distances between construction site locations (noise sources) and surrounding off-site noise-sensitive receptors were measured using Project architectural drawings, site plans, and Google Earth.

4. The construction noise level was then calculated, in terms of hourly $L_{eq}$, for sensitive receptor locations based on the standard point-source noise-distance attenuation factor of 6 dBA $L_{eq}$ for each doubling of distance over a hard surface.
5. Construction noise levels were then compared to the construction noise significance threshold of ambient plus 5 dBA.

## 7.2 Off-Site Roadway Noise (Construction and Operation)

Roadway noise impacts were evaluated using the FHWA Traffic Noise Model (TNM) and the Caltrans TeNS method based on the roadway traffic volume data provided in the Transportation Study prepared for the Project.[15] This method, considered an industry standard, allows for the definition of roadway configurations, barrier information (if any), and receiver locations. Roadway noise attributable to Project development was calculated and compared to baseline noise levels that would occur under the "Without Project" condition.

The off-site construction traffic noise significance threshold used in this analysis is an increase in the existing traffic noise level of 5 dBA $L_{eq}$ along studied roadway segments.

As discussed in the Burbank2035 Draft EIR (pp. 4.13-9 and 4.13-11), a permanent increase in ambient noise of 5 dBA CNEL or greater is considered significant where existing noise levels are less than 60 dBA CNEL and an increase of 3 dBA CNEL or greater is considered significant where existing noise levels are greater than 60 dBA CNEL. All studied roadway segments with the exception of one are exposed to existing traffic noise of greater than 60 dBA CNEL. Therefore, for purposes of this analysis, an increase of 3 dBA would be considered a potentially significant noise impact for operations.

## 7.3 On-Site Stationary Noise (Operation)

Stationary point-source noise levels were evaluated by identifying the noise levels generated by outdoor stationary noise sources such as rooftop mechanical equipment, outdoor open space, and parking structure automobile operations, calculating the hourly $L_{eq}$ noise level from each noise source at sensitive receiver property lines, and comparing such noise levels to existing ambient noise levels. More specifically, the following steps were undertaken to calculate outdoor stationary noise impacts:

1. Ambient noise levels at surrounding off-site sensitive receptor locations were determined based on field measurement data (see Table 1).
2. Distances between stationary noise sources and surrounding sensitive receptor locations were measured using Project architectural drawings, site plans, and Google Earth.
3. Stationary source noise levels were then calculated for each sensitive receptor location based on the standard point-source noise-distance attenuation factor of 6 dBA for each doubling of distance over a hard surface.

15 Gibson Transportation Consulting Inc., *Draft Transportation Study for the 2311 N. Hollywood Way Mixed-Use Project*, June 2021.

4. Noise level increases were compared to the stationary source noise significance thresholds discussed below.
5. Parking related noise levels were estimated utilizing the methodology recommended by the FTA for the general assessment of stationary transit noise sources. Using this methodology, the Project's peak hourly noise level that would be generated by the on-site parking levels was estimated using the following FTA equation for a parking lot:[16]

   $L_{eq}(h) = SEL_{ref} + 10\log(N_A/1000) - 35.6$, where

   $L_{eq}(h)$ = hourly $L_{eq}$ noise level at 50 feet

   $SEL_{ref}$ = reference noise level for stationary noise source represented in sound exposure level (SEL) at 50 feet

   $N_A$ = number of automobiles per hour

For operational stationary noise, the operational stationary noise significance threshold used in this analysis is whether the project causes the ambient noise level measured at the property line of affected uses to increase by 5 dBA.

## 7.4 Groundborne Vibration

Groundborne vibration impacts were evaluated by identifying potential vibration sources, measuring the distance between vibration sources and surrounding structure locations, and making a determination based on the significance criteria described in the Vibration Impacts section.

The City currently does not have significance criteria to assess vibration impacts during construction. Thus, FTA guidelines set forth in their 2018 Transit Noise and Vibration Assessment are used to evaluate potential impacts related to construction vibration for both potential building damage and human annoyance. The FTA guidelines regarding construction vibration are the most current guidelines and are commonly used in evaluating vibration impacts.

Based on the FTA guidance, groundborne vibration could result in building damage if any of the following were to occur:

Project construction activities cause groundborne vibration levels to exceed 0.5 in/sec PPV at the nearest offsite reinforced-concrete, steel, or timber building.

Project construction activities cause groundborne vibration levels to exceed 0.3 in/sec PPV at the nearest offsite engineered concrete and masonry building.

Project construction activities cause groundborne vibration levels to exceed 0.2 in/sec PPV at the nearest offsite non-engineered timber building.

Project construction activities cause groundborne vibration levels to exceed 0.12 in/sec PPV at buildings extremely susceptible to vibration damage, such as historic buildings.

[16] Federal Transit Administration (FTA), *Transit Noise and Vibration Impact Assessment*, September 2018, Section 4.4, Tables 4-13 and 4-14.

Structural impacts from the Project were evaluated based on the standard attenuation formula, as follows:

$PPV_{equip}$ = $PPV_{ref}$ x $(25/D)^n$

Where: $PPV_{equip}$ is the PPV in in/sec of the equipment adjusted for distance

$PPV_{ref}$ is the reference vibration level in in/sec at 25 feet

D is the distance from the equipment to the receiver

n is the soil type classification (typically ranging from 1 to 1.5; a factor of 1.5 was used for this analysis)

Based on FTA guidance, construction vibration could be perceived as annoying to humans if any of the following were to occur:

> Project construction activities cause groundborne vibration levels to exceed 72 VdB at off-site sensitive uses, including residential uses.

The FTA guidance further classifies the vibration levels above based on whether the vibration-producing events are frequent, occasional, or infrequent. "Frequent Events" is defined as more than 70 vibration events of the same source per day. "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day. "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day. The values listed above are applicable to "Frequent Events." For purposes of conservative analysis, the vibration analysis provided herein for potential human annoyance compares the estimated vibration levels generated during construction and operation of the Project to the 72 VdB significance threshold for off-site residential uses for "Frequent Event."

Similar to structural impacts, the Project's human annoyance impacts are calculated using the same methodology which provides VdB values for different types of equipment at a distance of 25 feet. The standardized PPV values can then be attenuated based on the measured distance of the vibration sensitive receptor from the Project Site. The standard attenuation formula is as follows:

$VdB_{equip}$ = $VdB_{ref}$ – 30 x log(D/25)

Where: $VdB_{equip}$ is the noise level in velocity decibels of the equipment adjusted for distance

$VdB_{ref}$ is the reference vibration level in velocity decibels at 25 feet

D is the distance from the equipment to the receiver

# 7.5 Project Design Features

## Project Design Features

The following Project Design Features would ensure that future on-site residential uses would be exposed to acceptable exterior and interior noise levels:

**PDF-NOI-1:** **Outdoor Noise Impacts.** All residential units with outdoor livable spaces (e.g., exterior patios or balconies fronting N. Hollywood Way will install a noise barrier with a minimum height of 4 feet.

**PDF-NOI-2:** **Indoor Noise Impacts.** Indoor noise level exposure would be minimized by incorporating the following construction practices:

Mechanical ventilation, such as air conditioning, shall be required for all on-site residential units to ensure that windows can remain closed for prolonged periods of time.

Building façade upgrades, such as windows upgrades with sound transmission class (STC) ratings higher than standard building would provide (STC-28) shall be implemented for all residential units facing the streets (N. Hollywood Way and Vanowen Street), railroad tracks, and airport approach/departure paths. Windows with STC-30 or higher shall be installed for bedrooms and living rooms associated with residential units on the eastern, northern and western sides of the Project Site.

Windows and sliding glass doors shall be mounted in low air infiltration rated frames.

Exterior doors shall be solid core with perimeter weather stripping and threshold seals.

Roof or attic vents facing the noise source of concern shall be boxed or provided with baffling.

# 8. Environmental Impacts

## 8.1 Noise

### Project Construction

Short-term noise impacts would be associated with demolition, excavation, grading, paving, and underground construction during Project construction. Construction-related short-term noise levels would be higher than existing ambient noise levels in the Project area during construction activities but would cease to occur once construction is completed. Section 9-1-1-105.10 of the BMC requires that all construction, alteration, movement, enlargement, replacement, repair, equipment, maintenance, removal and demolition work within the City's boundary be limited to the hours of 7 a.m. to 7 p.m., Monday through Friday, and 8 a.m. to 5 p.m. on Saturday. No construction work should occur on Sundays and City holidays. The BMC provides for limited exceptions to these restrictions.

Construction workers traveling to and from the Project Site and the delivery of construction equipment and materials to the Project Site would incrementally increase noise levels on roadways in the Project area. The grading phase of construction would result in the highest levels of construction traffic noise and would include the greatest number of daily heavy-duty construction trucks including 70 haul trucks and 22 vendor trucks. Construction traffic noise has been calculated assuming that the number of haul and vendor trucks traveling to the Project Site would be split evenly throughout the

8-hour work day and that all worker vehicles would arrive at the Project Site within the same hour. Assuming that an hourly total of 12 heavy-duty trucks and 30 passenger vehicles traveling to/from the Project Site along the same roadway, noise levels would reach 57.8 dBA CNEL. Project-related construction traffic noise would not be higher than any of the existing traffic noise levels along any studied roadway segment (see Table 10, below). Therefore, short-term construction-related impacts associated with on-road construction traffic would be less than significant.

The second type of short-term noise impact is related to noise generated during site preparation and onsite construction on the project site. Construction is completed in discrete steps, each of which has its own mix of equipment, and consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site, and therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. **Table 7**, *RCNM Default Noise Emission Reference Levels and Usage Factors*, lists typical construction equipment noise levels recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor, taken from the FHWA Roadway Construction Noise Model (RCNM) (FHWA 2006).

**TABLE 7**
**RCNM DEFAULT NOISE EMISSION REFERENCE LEVELS AND USAGE FACTORS**

| Equipment Description | Impact Device? | Acoustical Usage Factor | Spec. 721.560 $L_{max}$ at 50 Feet (dBA, slow) | Actual Measured $L_{max}$ at 50 Feet (dBA, slow) | Number of Actual Data Samples (Count) |
|---|---|---|---|---|---|
| All other equipment >5 HP | No | 50 | 85 | N/A | 0 |
| Backhoe | No | 40 | 80 | 78 | 372 |
| Compactor (ground) | No | 20 | 80 | 83 | 57 |
| Concrete mixer truck | No | 40 | 85 | 79 | 40 |
| Concrete saw | No | 20 | 90 | 90 | 55 |
| Crane | No | 16 | 85 | 81 | 405 |
| Dump truck | No | 40 | 84 | 76 | 31 |
| Excavator | No | 40 | 85 | 81 | 170 |
| Front end loader | No | 40 | 80 | 79 | 96 |
| Generator | No | 50 | 82 | 81 | 19 |
| Generator (<25 kVA, variable-message signs) | No | 50 | 70 | 73 | 74 |
| Pickup truck | No | 40 | 55 | 75 | 1 |
| Scraper | No | 40 | 85 | 84 | 12 |
| Tractor | No | 40 | 84 | N/A | 0 |
| Vacuum street sweeper | No | 10 | 80 | 82 | 19 |

SOURCE: Federal Highway Administration, *Highway Construction Noise Handbook*, 2006, Table 9.1.
NOTES:
dBA = A-weighted decibels; HP = horsepower; N/A = not applicable

Project construction would include nine phases with various construction equipment in each phase. **Table 8**, *Summary of Construction Phases and Equipment*, list the types and number of pieces of construction equipment that would be used during each construction phase:

**TABLE 8**
**SUMMARY OF CONSTRUCTION PHASES AND EQUIPMENT**

| Construction Phase | Equipment (number of equipment) |
|---|---|
| Demolition | Crawler Tractor (1), Excavators (2), Off-Highway Tractors (1), Sweeper/Scrubber (1); |
| Site Preparation | Crawler Tractor (1), Excavator (1), Street Sweeper/Scrubber (1); |
| Grading/Excavation | Compactor (ground, 1), Excavator (1), Off-Highway Tractor (1), Rubber Tired Loader (2), Scraper (1), Sweeper/Scrubber (1); |
| Drainage/Utilities/Trenching | Tractor/Loader/Backhoe (1), Concrete/Industrial Saw (1), Forklift (1), Generator Set (1), Sweeper/Scrubber (1), Trencher (1); |
| Foundations/Concrete Pour | Cement and Mortar Mixers (28),, Cranes (2), Forklift (1), Generator Set (2), Skid Steer Loader (1), Sweeper/Scrubber; |
| Building Construction | Cement and Mortar Mixer (1), Crane (2), Forklift (1), Generator Set (2), Front End Loader (1), Vacuum Street Sweeper (1); |
| Architectural Coating | Air Compressor (3), Sweeper/Scrubber; |
| Paving | Sweeper/Scrubber (1); |
| Landscaping | Rubber Tired Loader (1), Skid Steer Loader (1), Sweeper/Scrubber (1). |

SOURCE: ESA, 2021

Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings. While the operating cycles may involve 1 or 2 minutes of full power operation (generating the maximum sound levels identified in Table 5), the equipment would be moving around and would not stay at a specific location for the entire cycle. Therefore, adjacent receivers would be exposed to the maximum noise level intermittently rather than continuously.

Over the course of a construction day, the highest noise levels would be generated when multiple pieces of construction equipment are being operated concurrently. The Project's estimated construction noise levels were calculated for a scenario in which all pieces of construction equipment used in a phase were assumed to operate simultaneously, accounting for appropriate distances between equipment and the usage factor for each piece of equipment.

A summary of calculated construction noise level is provided in **Table 9**, *Summary of Construction Noise at Each Receiver Location*. Maximum construction noise levels range from 58 dBA $L_{eq}$ to 75 dBA $L_{eq}$.

As stated previously, sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. For a single point source, sound levels decrease approximately 6 dBA for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment.

**TABLE 9**
**SUMMARY OF CONSTRUCTION NOISE AT EACH RECEIVER LOCATION**

| | Construction Noise Levels (Leq, dBA) | | | | | |
|---|---|---|---|---|---|---|
| **Location** | **R1** | **R2** | **R3** | **R4** | **R5** | **R6** |
| Demolition | 64 | 60 | 66 | 50 | 59 | 48 |
| Site Preparation | 58 | 54 | 60 | 45 | 54 | 43 |
| Grading/Excavation | 64 | 60 | 65 | 51 | 60 | 48 |
| Drainage/Utilities/Trenching | 66 | 62 | 68 | 52 | 62 | 50 |
| Foundations/Concrete Pour | 74 | 70 | 75 | 60 | 69 | 58 |
| Building Construction | 63 | 59 | 64 | 49 | 58 | 47 |
| Architectural Coating | 61 | 56 | 63 | 46 | 56 | 45 |
| Paving | 54 | 49 | 56 | 39 | 49 | 38 |
| Landscaping | 57 | 54 | 59 | 44 | 53 | 42 |
| Overlapping Phases (Paving + Architectural Coating) | 62 | 57 | 63 | 47 | 57 | 46 |
| Overlapping Phases (Paving + Landscaping) | 59 | 55 | 61 | 45 | 55 | 43 |
| **Maximum Noise Levels** | **74** | **70** | **75** | **60** | **69** | **58** |
| Ambient Noise Levels | 49.9 | 70.9[a] | 63.7 | 70.9 | 71.1 | 49.8 |
| Threshold (ambient +5 dBA) | 54.9 | 75.9 | 68.7 | 75.9 | 76.1 | 54.8 |
| Exceeds Threshold? | **Yes** | No | **Yes** | No | No | **Yes** |

NOTE:
[a] The ambient noise measurement recorded at location R2 is not representative of typical ambient noise levels due to street resurfacing work during the noise measurement period. As a result, the ambient noise level from measurement location R4, which is representative of location R2, has been utilized for impact analyses herein.

As shown in Table 9, construction on the Project Site would expose the nearest noise-sensitive uses in the Project vicinity, represented by R1 through R6 above, to noise levels reaching up to 58 to 75 dBA $_{Leq}$ over a period of one hour. Maximum noise levels associated with construction activities would result in substantial temporary increases in ambient noise (greater than 5 dBA $L_{eq}$ over ambient levels) at R1, R3, and R6 and mitigation measures would be required.

## Project Operations

### *Traffic Noise Impacts*

Roadway noise impacts have been evaluated using the Caltrans Technical Noise Supplement (TeNS) method based on the roadway traffic volume data provided in the Transportation Study prepared for the Project. This method allows for the definition of roadway configurations, barrier information (if any), and receiver locations. Roadway noise attributable to Project development was calculated and compared to baseline noise levels that would occur under the "Without Project" condition.

**Table 10**, *Existing Baseline Roadway Noise Levels*, lists the existing baseline traffic noise levels. **Table 11**, *Existing Roadway with Project Noise Levels*, lists the existing baseline plus project traffic noise levels. Adding the Project traffic to the existing conditions would result in changes in the traffic noise levels from no measurable change compared to the corresponding baseline traffic noise level along all roadway segments analyzed, with up to 0.3 dBA increase. As discussed in the Burbank2035 Draft EIR (page 4.13-9 and 4.13-11), a permanent increase in ambient noise of 5 dBA CNEL or greater is considered significant where existing noise levels are less than 60 dBA CNEL and an increase of 3 dBA CNEL or greater is considered significant where existing noise levels are greater than 60 dBA CNEL. All studied roadway segments with the exception of one are exposed to existing traffic noise of greater than 60 dBA CNEL. Therefore, for purposes of this analysis, an increase of 3 dBA would be considered a potentially significant noise impact. As shown in Table 9, the Project would not result in significant increases in existing traffic noise levels. Therefore, no significant traffic noise impact under the existing plus project scenario would occur from the implementation of the Project.

**Table 12**, *Future Roadway with Project Noise Levels*, lists the future baseline plus project traffic noise levels. Adding the Project traffic to the future conditions would result in changes in the traffic noise levels from no measurable change compared to the corresponding baseline traffic noise level along all roadway segments analyzed, with up to 0.3 dBA increase. The future baseline plus project traffic noise levels along these roadway segments would have noise level changes less than the 3 dBA increase considered to have potentially significant noise impact and would not have any project-related traffic noise impacts. Therefore, no significant traffic noise impact would occur from the implementation of the Project.

### *Fixed Mechanical Equipment Noise*

The operation of mechanical equipment such as air conditioning equipment may generate audible noise levels. According Project plans, the Project's mechanical equipment would be fully enclosed on the rooftops and within mechanical rooms within parking areas. Mechanical equipment that would be fully shielded from nearby noise sensitive uses would avoid conflicts with adjacent uses and would not result in audible increases in noise levels. Impacts related to mechanical equipment noise would be less than significant and no mitigation measures are required.

### *Parking Structure Noise*

The Project consists of three 5-level parking areas providing 455 parking spaces on the west side of the office building, 543 spaces on the north side of Residential Building 1, and 589 spaces on the south side of Residential Building 2. These parking structures would not be fully enclosed and would potentially expose off-site uses to parking structure-related noise.

For the purpose of providing a conservative, quantitative estimate of the noise levels that would be generated from parking activity within each of the three parking structures, the methodology recommended by FTA for the general assessment of stationary transit noise sources is used.

**TABLE 10**
**EXISTING BASELINE ROADWAY NOISE LEVELS**

| Roadway Segment | Traffic Noise Levels (dBA CNEL) |
|---|---|
| | Existing (2021)a |
| Hollywood Way between Winona Ave and Thornton Ave | 71.8 |
| Hollywood Way between Thornton Ave and Avon St | 71.5 |
| Hollywood Way between Avon St and Vanowen St | 68.2 |
| Hollywood Way between Vanowen St and Valhalla Dr | 67.4 |
| Hollywood Way between Valhalla Dr and Victory Blvd | 69.4 |
| Hollywood Way between Victory Blvd and Burbank Blvd | 69.5 |
| Buena Vista St between Victory Pl and Empire Ave | 69.6 |
| Buena Vista St between Empire Ave and Vanowen St | 71.8 |
| Buena Vista St between Vanowen St and Victory Blvd | 71.5 |
| Buena Vista St s/o Victory Blvd | 70.4 |
| Thornton Ave e/o N. Hollywood Way | 65.9 |
| Empire Ave w/o Buena Vista St | 67.9 |
| Empire Ave e/o Buena Vista St | 70.3 |
| Vanowen St between Clybourn Ave and N. Hollywood Way | 70.4 |
| Vanowen St between N. Hollywood Way and Buena Vista St | 70.0 |
| Victory Blvd w/o N. Hollywood Way | 71.6 |
| Valhalla Dr between Project Driveway and N Hollywood Way | 59.4 |
| Victory Blvd between N. Hollywood Way and Buena Vista St | 71.1 |
| Victory Blvd e/o Buena Vista St | 70.4 |
| Burbank Blvd w/o N. Hollywood Blvd | 67.5 |
| Burbank Blvd e/o N. Hollywood Blvd | 67.7 |

SOURCE: ESA, 2021.
NOTES:
Decibel levels were calculated at a distance of 50 feet from the roadway centerline.
a Traffic study prepared for the Project identified 2021 traffic volumes as existing conditions.

**TABLE 11**
**EXISTING ROADWAY WITH PROJECT NOISE LEVELS**

| Roadway Segment | Traffic Noise Levels (dBA CNEL) | | | Significant Increase?[b] |
|---|---|---|---|---|
| | Existing (2021)[a] | Existing (2021) with Project | Increase over Existing | |
| N. Hollywood Way between Winona Ave and Thornton Ave | 71.8 | 71.9 | 0.1 | No |
| N. Hollywood Way between Thornton Ave and Avon St | 71.5 | 71.6 | 0.1 | No |
| N. Hollywood Way between Avon St and Vanowen St | 68.2 | 68.3 | 0.1 | No |
| N. Hollywood Way between Vanowen St and Valhalla Dr | 67.4 | 67.6 | 0.2 | No |
| N. Hollywood Way between Valhalla Dr and Victory Blvd | 69.4 | 69.6 | 0.2 | No |
| N. Hollywood Way between Victory Blvd and Burbank Blvd | 69.5 | 69.7 | 0.2 | No |
| Buena Vista St between Victory Pl and Empire Ave | 69.6 | 69.6 | 0.0 | No |
| Buena Vista St between Empire Ave and Vanowen St | 71.8 | 71.9 | 0.1 | No |
| Buena Vista St between Vanowen St and Victory Blvd | 71.5 | 71.6 | 0.1 | No |
| Buena Vista St s/o Victory Blvd | 70.4 | 70.5 | 0.1 | No |
| Thornton Ave e/o Hollywood Way | 65.9 | 65.9 | 0.0 | No |
| Empire Ave w/o Buena Vista St | 67.9 | 67.9 | 0.0 | No |
| Empire Ave e/o Buena Vista St | 70.3 | 70.5 | 0.2 | No |
| Vanowen St between Clybourn Ave and N. Hollywood Way | 70.4 | 70.7 | 0.3 | No |
| Vanowen St between N. Hollywood Way and Buena Vista St | 70.0 | 70.2 | 0.2 | No |
| Valhalla Dr between Project Driveway and N Hollywood Way | 59.4 | 59.4 | 0.0 | No |
| Victory Blvd w/o N. Hollywood Way | 71.6 | 71.7 | 0.1 | No |
| Victory Blvd between N. Hollywood Way and Buena Vista St | 71.1 | 71.1 | 0.0 | No |
| Victory Blvd e/o Buena Vista St | 70.4 | 70.5 | 0.1 | No |
| Burbank Blvd w/o N. Hollywood Blvd | 67.5 | 67.6 | 0.1 | No |
| Burbank Blvd e/o N. Hollywood Blvd | 67.7 | 67.8 | 0.1 | No |

SOURCE: ESA, 2021.

NOTES:

Decibel levels were calculated at a distance of 50 feet from the roadway centerline.

[a] Traffic study prepared for the Project identified 2021 traffic volumes as existing conditions.
[b] Threshold used for significant increase is 3 dBA.

**TABLE 12**
**FUTURE ROADWAY WITH PROJECT NOISE LEVELS**

| Roadway Segment | Traffic Noise Levels (dBA CNEL) Future (2025)[a] | Future (2025) with Project | Increase over Baseline | Significant Increase?[b] |
|---|---|---|---|---|
| N. Hollywood Way between Winona Ave and Thornton Ave | 72.6 | 72.7 | 0.1 | No |
| N. Hollywood Way between Thornton Ave and Avon St | 72.5 | 72.6 | 0.1 | No |
| N. Hollywood Way between Avon St and Vanowen St | 68.7 | 68.8 | 0.1 | No |
| N. Hollywood Way between Vanowen St and Valhalla Dr | 67.9 | 68.1 | 0.2 | No |
| N. Hollywood Way between Valhalla Dr and Victory Blvd | 70.0 | 70.1 | 0.1 | No |
| N. Hollywood Way between Victory Blvd and Burbank Blvd | 70.1 | 70.3 | 0.2 | No |
| Buena Vista St between Victory Pl and Empire Ave | 69.8 | 69.9 | 0.1 | No |
| Buena Vista St between Empire Ave and Vanowen St | 72.1 | 72.2 | 0.1 | No |
| Buena Vista St between Vanowen St and Victory Blvd | 71.8 | 71.9 | 0.1 | No |
| Buena Vista St s/o Victory Blvd | 70.7 | 70.7 | 0.0 | No |
| Thornton Ave e/o Hollywood Way | 63.6 | 63.6 | 0.0 | No |
| Empire Ave w/o Buena Vista St | 67.6 | 67.6 | 0.0 | No |
| Empire Ave e/o Buena Vista St | 70.2 | 70.3 | 0.1 | No |
| Vanowen St between Clybourn Ave and N. Hollywood Way | 70.6 | 70.9 | 0.3 | No |
| Vanowen St between N. Hollywood Way and Buena Vista St | 70.2 | 70.4 | 0.2 | No |
| Valhalla Dr between Project Driveway and N Hollywood Way | 59.4 | 59.4 | 0.0 | No |
| Victory Blvd w/o N. Hollywood Way | 72.1 | 72.1 | 0.0 | No |
| Victory Blvd between N. Hollywood Way and Buena Vista St | 71.5 | 71.5 | 0.0 | No |
| Victory Blvd e/o Buena Vista St | 70.6 | 70.6 | 0.0 | No |
| Burbank Blvd w/o N. Hollywood Blvd | 67.7 | 67.8 | 0.1 | No |
| Burbank Blvd e/o N. Hollywood Blvd | 67.9 | 67.9 | 0.0 | No |

SOURCE: ESA, 2021.
NOTES:
Decibel levels were calculated at a distance of 50 feet from the roadway centerline.
a Traffic study prepared for the proposed project identified 2021 traffic volumes as existing conditions.
b Threshold used for significant increase is 3 dBA.

Using the FTA's reference noise level of 92 dBA SEL[17] at 50 feet from the noise source for a parking lot, noise levels from each of the proposed parking structure façades was estimated. **Table 13**, *Parking Structure Noise Levels ($L_{eq}$)*, summarizes estimated parking-related noise levels and potential increases in ambient noise at the nearest sensitive receptors. As shown, parking-related noise from individual driveways as well as the total of all three driveways would not result in significant increases in ambient noise levels (ambient plus 5 dBA). As such, impacts would be less than significant, no mitigation measures are required.

17 FTA, *Transit Noise and Vibration Impact Assessment*, September 2018.

**TABLE 13**
**PARKING STRUCTURE NOISE LEVELS ($L_{EQ}$)**

| Project Parking | Sensitive Receptor | Estimated Parking Related Noise Levels, ($L_{eq}$) | Existing Ambient Noise Levels, dBA ($L_{eq}$) | Ambient + Project Noise Levels, dBA ($L_{eq}$) | Significance Threshold, dBA ($L_{eq}$) | Exceeds Significance Threshold? |
|---|---|---|---|---|---|---|
| Office Building | R1 | 34.4 | 49.9 | 50.0 | 54.9 | No |
| | R2 | 24.1 | 70.9 | 70.9 | 75.9 | No |
| | R3 | 36.3 | 63.7 | 63.7 | 68.7 | No |
| | R4 | 17.1 | 70.9 | 70.9 | 75.9 | No |
| | R5 | 15.2 | 71.1 | 71.1 | 76.1 | No |
| | R6 | 13.8 | 49.8 | 49.8 | 54.8 | No |
| Residential Building I | R1 | 18.1 | 49.9 | 49.9 | 54.9 | No |
| | R2 | 14.4 | 70.9 | 70.9 | 75.9 | No |
| | R3 | 18.3 | 63.7 | 63.7 | 68.7 | No |
| | R4 | 15.5 | 70.9 | 70.9 | 75.9 | No |
| | R5 | 30.1 | 71.1 | 71.1 | 76.1 | No |
| | R6 | 16.0 | 49.8 | 49.8 | 54.8 | No |
| Residential Building II | R1 | 25.4 | 49.9 | 49.9 | 54.9 | No |
| | R2 | 18.4 | 70.9 | 70.9 | 75.9 | No |
| | R3 | 36.7 | 63.7 | 63.7 | 68.7 | No |
| | R4 | 20.2 | 70.9 | 70.9 | 75.9 | No |
| | R5 | 16.1 | 71.1 | 71.1 | 76.1 | No |
| | R6 | 18.1 | 49.8 | 49.8 | 54.8 | No |
| Total Combined Parking Noise | R1 | 35.0 | 49.9 | 50.0 | 54.9 | No |
| | R2 | 25.5 | 70.9 | 70.9 | 75.9 | No |
| | R3 | 39.6 | 63.7 | 63.7 | 68.7 | No |
| | R4 | 22.8 | 70.9 | 70.9 | 75.9 | No |
| | R5 | 30.4 | 71.1 | 71.1 | 76.1 | No |
| | R6 | 21.1 | 49.8 | 49.8 | 54.8 | No |

SOURCE: ESA, 2021.

## *Outdoor Open Space Noise*

The Project would provide public and private open space including Fry’s Way Plaza (east–west paseo), a north-south paseo, podium courtyards, residential pool decks, and a level 1 Plaza. The proposed open spaces would include passive use, would not include amplified sound, and would not serve as locations for organized events. Therefore, outdoor open spaces would not result in audible increases in noise levels at sensitive receptors. Impacts related to outdoor open space would be less than significant and no mitigation measures are required.

# 8.2 Vibration

## Construction

### *Structural Damage*

Site preparation for the Project is expected to use a Tractor/Loader/Backhoe (1), Excavator (1), Vacuum Street Sweeper (1); It is anticipated that the greatest levels of vibration would occur during the site preparation phase. All other phases are expected to result in lower vibration levels. As shown in **Table 14**, *Vibration Source Amplitudes for Construction Equipment*, except for impact pile drivers, which would not be used be used on the Project Site, no other construction equipment would generate a vibration level exceeding the 0.5 in/sec PPV threshold at a distance of 25 feet.

**TABLE 14**
**VIBRATION SOURCE AMPLITUDES FOR CONSTRUCTION EQUIPMENT**

| | Reference PPV/$L_V$ at 25 Feet | |
|---|---|---|
| **Equipment** | **PPV (inch/sec)** | **$L_V$ (VdB)** |
| Pile Driver (Impact), Typical | 0.644 | 104 |
| Pile Driver (Sonic), Typical | 0.170 | 93 |
| Vibratory Roller | 0.210 | 94 |
| Hoe Ram | 0.089 | 87 |
| Earth Mover | 0.011 | 69 |
| Excavator | 0.047 | 81 |
| Fork Lift | 0.047 | 81 |
| Skid Steer | 0.047 | 81 |
| Wheel Loader | 0.076 | 86 |
| Tractor | 0.076 | 86 |
| Backhoe | 0.076 | 86 |
| Large Bulldozer | 0.089 | 87 |
| Caisson Drilling | 0.089 | 87 |
| Loaded Trucks | 0.076 | 86 |
| Vacuum Street Sweeper | 0.035 | 79 |
| Jackhammer | 0.035 | 79 |
| Small Bulldozer | 0.003 | 58 |

SOURCES: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, 2006, Table 12-2; Caltrans, *Transportation and Construction Vibration Guidance Manual*, 2013.

NOTE:

PPV = peak particle velocity; LV = velocity in decibels; inch/sec = inches per second; VdB = vibration velocity decibels

A historic resource has been identified at 3800 Valhalla Drive. The structure is located approximately 115 feet south of the Project Site boundary. As shown in Table 5, the structural damage threshold for buildings extremely susceptible to vibration damage is 0.12 in/sec PPV. At a distance of 115 feet, maximum vibration velocities during site preparation would reach 0.008 in/sec PPV. Therefore, Project construction would not result in vibration velocities that would exceed structural damage threshold of 0.12 in/sec PPV for historic structures or 0.5 in/sec PPV for reinforced-concrete, steel or timber structures. No structural damage from Project construction would occur, and no mitigation is required.

### *Human Annoyance*

Vibration at 100 feet from the source is 18 VdB lower than the vibration level at 25 feet. Therefore, receptors at 50 feet from the construction activity may be exposed to groundborne vibration up to 78 VdB (or 0.030 inch/sec PPV or lower). Receptors at 100 feet from the source may be exposed to groundborne vibration up to 69 VdB.

Existing sensitive uses (residences) in the immediate vicinity include:

**Receiver Location R1:** This location represents the existing noise environment of the area to the west, adjacent to the Pierce Brothers Valhalla Memorial Park and Mortuary. The distance to Project Site varies from approximately 380 to 1,300 feet, depending on the area with construction equipment in each phase. At these distances, vibration level would be reduced by 35 VdB to 51 VdB.

**Receiver Location R2:** This location represents the area to the southwest of the Project Site, adjacent to residences on W. Pacific Avenue. The distance to Project Site varies from 700 to 1,400 feet, depending on the area with construction equipment in each phase. At these distances, vibration level would be reduced by 43 VdB to 52 VdB.

**Receiver Location R3:** This location represents the existing noise environment in the area (Larry L. Maxam Memorial Park) to the south of the Project Site along N. Screenland Drive. The distance to Project Site varies from 315 to 990 feet, depending on the area with construction equipment in each phase. At these distances, vibration level would be reduced by 34 VdB to 48 VdB.

**Receiver Location R4:** This location represents the existing noise environment at residences near the corner of N. Hollywood Way and W. Pacific Avenue, southeast of the Project Site. The distance to Project Site varies from 700 to 1,200 feet, depending on the area with construction equipment in each phase. At these distances, vibration level would be reduced by 43 VdB to 50 VdB.

**Receiver Location R5:** This location represents the existing noise environment of a hotel (Los Angeles Marriott Burbank Airport) to the northeast of the Project Site along N. Hollywood Way. The distance to Project Site varies from 715 to 1,500 feet, depending on the area with construction equipment in each phase. At these distances, vibration level would be reduced by 44 VdB to 53 VdB.

**Receiver Location R6:** This location represents the existing noise environment of an elementary school (Providencia Elementary School) to the southeast of the Project Site along W. Pacific Avenue. The distance to Project Site varies from 820 to 1,800 feet, depending on the area with construction equipment in each phase. At these distances, vibration level would be reduced by 45 VdB to 56 VdB.

With these distance attenuations, construction equipment generated vibration would be reduced to 56 VdB or lower at the off-site sensitive receiver locations. This range of vibration levels is lower than the 65 VdB identified in Table 6 for human threshold of vibration impact. No human annoyance effect would occur from project construction.

### Operations

The project proposes that would not generate any substantial ground vibration. No operational vibration impacts would occur.

## 8.3 Airport Noise

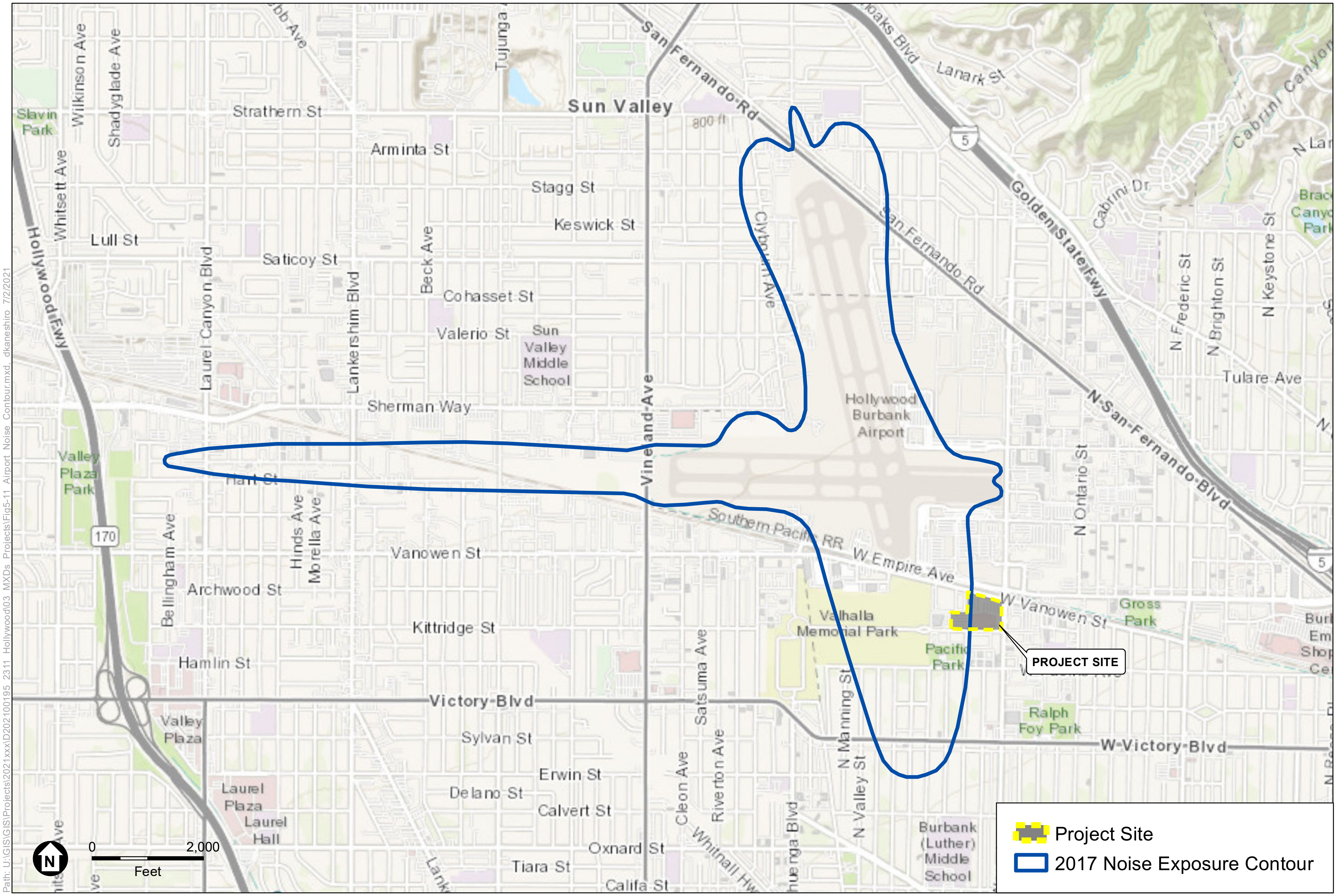
The Project Site is located within an airport land use plan. The nearest airport is the Burbank-Hollywood Airport, located approximately 1,100 feet north of the Project Site. The Project proposes residential uses that could be exposed to aircraft noise from the Airport. Traffic noise from vehicular traffic on N. Hollywood Way, as well as train noise on the railroad tracks to the north of the Project Site would also contribute to the ambient noise in the Project area. Typically, the environment's impacts on a project are not considered under CEQA. Thus, the following analysis of potential noise impacts on future on-site residential uses has been included for informational purposes only.

The City's General Plan community noise compatibility guidelines sets normally acceptable, possibly acceptable, and normally unacceptable exterior noise levels for various land uses. For multifamily residential uses, whether it is pure residential or mixed-use area, the normally acceptable exterior noise level is up to 65 dBA CNEL. In possibly acceptable zone (61 to 70 dBA CNEL), residential units should be established only when exterior (living) areas are omitted from project or noise levels in exterior areas can be mitigated to the normally acceptable level. Therefore, the following analysis discusses potential noise impacts to the proposed residential units and identify mitigation measures to mitigate exterior noise levels to the normally acceptable (65 dBA CNEL) exterior noise levels for new multifamily residential uses.

**Airport Noise.** The Bob Hope Airport 14 CFR Part 150 Noise Compatibility Study was prepared in March 2016.[18] As shown in **Figure 4**, *Hollywood Burbank Airport Contour*, a small portion of the western edge of the residential units (Building 1 and Building 2) would lie within the Airport 65 dBA CNEL As shown in **Table 15**, *Airport Noise Levels*, based on the distance of future residential uses from the contour line, it is estimated that the western edge of residential Buildings 1 and 2 are exposed to 65.5 dBA CNEL and the eastern edge of residential Buildings 1 and 2 are exposed to 64.8 dBA CNEL.

**Train Noise.** Based on the data provided, daily trains that travel by the Project Area typically include 45 passenger trains at a speed of 79 mph and 7 freight trains at a speed of 30 mph. Based on the railway monitoring logs conducted by ESA, it was determined that there are 2 engines (locomotives) and 40 railcars per freight train, and one engine (locomotive) and 6 railcars per passenger train. As a worst case assumption, 4 freight trains would pass by the Project area during the nighttime hours (10 p.m. to 7 a.m.), and 2 freight train would pass by during the daytime hours (7 a.m. to 10 p.m.). There are 34 Amtrak and Metrolink trains that travel during the daytime hours and 11 Amtrak and/or Metrolink trains that travel during the nighttime hours. Using the

[18] Coffman Associates, *Bob Hope Airport 14 CFR Part 150 Study, Noise Exposure Map Update*, April 2013.




SOURCE: Mapbox; Los Angeles County, 2020.

2311 N. Hollywood Way Project

**Figure 4**
Hollywood Burbank Airport Noise Contour

ESA

**TABLE 15**
**AIRPORT NOISE LEVELS**

| Building Area | Aircraft Noise Levels (dBA CNEL) Future[a] |
|---|---|
| **On-Site Residential Buildings 1 and 2** | |
| Western Side | 65.5 |
| Eastern Side | 64.8 |

SOURCE: ESA, 2021.
NOTES:
Decibel levels were estimated at the edge of residential units.
[a] Aircraft noise levels are estimated based on 2017 airport noise contour map.

approach provided by the FTA,[19] these trains would result in a (freight and passenger) train noise of 60.2 dBA Ldn/CNEL at a distance of 50 feet from the center of the railroad tracks. The nearest units to the railroad tracks are the Project townhome-style residential units that would be approximately 100 feet from the railroad tracks centerline, and would receive a 4.5 dBA reduction from doubling the distance (50 to 100 feet) from a line source. Similarly, the Project on-site live-work residential units are approximately 130 feet from the centerline of the railroad tracks, and would receive a noise reduction of 6.4 dBA. The other portions of Building 1 are located approximately 155 feet from the centerline of the railroad tracks and would receive a noise reduction of 7.4 dBA. Even though lower level residential units in Building 1 would be shielded by the live-work residential units, residential units on upper levels of Building 1 would not benefit from the shielding provided by the live-work units. Therefore, the train noise calculated for the Project on-site townhome-style units, live-work units, and other units in Building 1 are 55.7 dBA CNEL, 53.8 dBA CNEL, and 52.8 dBA CNEL, respectively.

**Vehicular Traffic Noise. Table 16**, *Traffic Noise Levels*, summarizes vehicular traffic noise levels affecting proposed on-site residential units. As shown in Table 12, traffic noise at 50 feet from the centerline of N. Hollywood Way, between Vanowen Street and Valhalla Drive, would be 68.1 dBA CNEL. At the residential units (Buildings 1 and 2) fronting N. Hollywood Way, which are at 60 feet from the centerline of N. Hollywood Way, traffic noise would be 67.3 dBA CNEL. At the live-work residential units (Building 1), which are at 60 to 75 feet from the centerline of N. Hollywood Avenue, traffic noise would be 67.3 to 66.3 dBA CNEL. The proposed townhome units would be approximately 330 feet from the centerline of N. Hollywood Way. Not accounting for shielding provided by the live-work residential units from the majority of traffic noise on N. Hollywood Way, the worst case traffic noise from N. Hollywood Way at the townhome units would be 59.9 dBA CNEL.

[19] FTA, *Transit Noise and Vibration Impact Assessment*, September 2018.

**TABLE 16**
**TRAFFIC NOISE LEVELS**

| Roadway Segment | Distance from Centerline | Traffic Noise Levels (dBA CNEL) |
|---|---|---|
| **Hollywood Way between Vanowen St and Valhalla Dr** | 50 | 68.1 |
| Buildings 1 and 2, Live Work Units | 60 | 67.3 |
| Live-Work Units | 75 | 66.3 |
| Townhome Units | 330 | 59.9 |
| **Vanowen St between Clybourn Ave and N Hollywood Way** | 50 | 70.9 |
| Building 1, Live-Work Units, Townhome Units | 60 | 70.1 |
| Live-Work Units | 75 | 69.1 |
| Townhome Units | 100 | 67.9 |
| **Valhalla Dr between Project Driveway and N Hollywood Way** | 50 | 59.4 |
| Building 2 | 30 | 61.6 |

SOURCE: ESA, 2021.
NOTES:
See Appendix J for traffic noise calculations worksheets.

From Vanowen Street, the traffic noise level at 50 feet from the roadway centerline is 70.9 dBA CNEL. The proposed townhome units are approximately 60 to 100 feet from the centerline of the road, the live –work units are approximately 60 to 75 feet away from the roadway centerline, and the closest residential units at Building 1 are approximately 60 feet from the roadway centerline. Therefore, the traffic noise level from Vanowen Street would be 67.9 to 70.1 dBA CNEL at the townhome units, 69.1 to 70.1 dBA CNEL at the live-work units, and 70.1 dBA CNEL at the closest residential units at Building 1. Building 2 residential units would be completely shielded from Vanowen Street by Building 1, townhome units, and live-work units and would therefore not be exposed to any noise from Vanowen Street.

From Valhalla Drive, the traffic noise level at 50 feet from the roadway centerline is 59.4 dBA CNEL. Building 2 residential units fronting Valhalla Drive are approximately 30 feet from the centerline of the roadway. The traffic noise level from Valhalla Drive would be 61.6 dBA CNEL at these units. The townhome units, live-work units, and Building 1 unit would be completely shielded from Valhalla Drive by Buildings 1 and 2 and would therefore not be exposed to any noise from Valhalla Drive.

**Combined Noise.** As discussed above, on-site residential units would be exposed to noise from aircraft, trains, and on-road vehicles. Noise levels from each of these noise sources have been estimated, as described above, based on the general location of proposed on-site residential units. Potential on-site noise exposure has been estimated by assuming worst-case noise exposure from each noise source, as described in detail below, and then logarithmically added to determine combined noise exposure. Some residential units would be exposed to traffic noise from both N. Hollywood Way and Vanowen Street or both N. Hollywood Way and Valhalla Drive. As a result, traffic noise from the appropriate two roadway segments has been combined to account for the worst case exposure for residential units in the northeast corner of the Project Site (Building 1) and the southeast corner of the Project Site (Building 2), respectively.

The townhome units and live-work units would be exposed to traffic noise from N Hollywood Drive and Vanowen Street, aircraft noise from the Airport, and train noise from the railroad tracks to the north of the Project Site. Estimated combined noise exposure for townhome units and live-work units is 71.8 dBA CNEL and 72.7 dBA CNEL, respectively.

Building 1 residential units fronting N. Hollywood Way would be exposed to traffic noise from N Hollywood Drive and Vanowen Street, aircraft noise from the Airport, and train noise from the railroad tracks to the north of the Project Site. Residential units on floors 4 to 5 of Buildings 1 and 2 would also be affected by train noise as the townhome-style units and the live-work units are only 3 stories high. Estimated combined noise exposure for Building 1 residential units fronting N Hollywood Drive is 72.7 dBA CNEL.

Building 2 residential units fronting N. Hollywood Way would be exposed to traffic noise from N Hollywood Drive and Valhalla Drive and aircraft noise from the Airport. Estimated combined noise exposure for Building 1 residential units fronting N Hollywood Drive is 72.7 dBA CNEL.

**Table 17**, *Combined Noise Levels*, lists the worst case traffic, aircraft, and train noise levels at the townhome units, live-work units, and residential units at Buildings 1 and 2 as well as the overall noise level exposure from all three sources combined. As shown in Table 17, the worst case combined noise levels at the townhome units, live-work units, Buildings 1 and 2 would be 71.8, 72.7, 72.7, and 69.9 dBA CNEL, respectively

**TABLE 17**
**COMBINED NOISE LEVELS**

| | Combined Noise Levels (dBA CNEL) | | | |
|---|---|---|---|---|
| Proposed On-site Residential Building | Traffic Noise (2029)a | Aircraft Noise | Train Noise | Combined Noise |
| Townhome Building[a] | 70.5 | 65.5 | 55.7 | 71.8 |
| Live-Work Building[a] | 71.9 | 64.8 | 53.8 | 72.7 |
| Building 1[a] | 71.9 | 64.8 | 52.8 | 72.7 |
| Building 2[b] | 68.3 | 64.8 | 0.0 | 69.9 |

SOURCE: ESA, 2021.

NOTES:

a Combined noise level includes traffic noise from N Hollywood Way and Vanowen St, aircraft noise, and train noise.
b Combined noise level includes traffic noise from N Hollywood Way and Valhalla Dr and aircraft noise.

Standard buildings in warm climate areas would provide a 24 dBA exterior-to-interior noise attenuation with windows and doors closed, and 12 dBA noise attenuation with windows open. In order to meet the 45 dBA CNEL interior noise standard for residential uses, residences proposed within the impact zone of 57 dBA CNEL (with windows open, interior spaces experiencing 45 dBA CNEL would experience an additional 12 dBA in noise) should be equipped with mechanical ventilation (e.g., air conditioning) to ensure that windows can remain closed for prolonged periods of time. For residential uses proposed within the impacts zone of 69 dBA

CNEL or higher (standard building practices would provide a 24 dBA exterior to interior noise attenuation resulting in an interior 45 dBA CNEL noise level exposure), building façade upgrades (e.g., windows upgrades with sound transmission class ratings higher than the STC-28 standard building design would provide) would be required. Based on the above analysis, future residences in the proposed on-site residential building would be required to have mechanical ventilation provided as either a standard feature. However, building façade upgrades are not required.

As Table 17 shows, the townhome units, live-work units, and Building 1 and 2 units nearest to N. Hollywood Way would be exposed to exterior noise levels exceeding the 65 dBA CNEL exterior noise standard recommended for residential uses. Therefore, since outdoor living areas such as balconies and patios are proposed, at a minimum, traffic noise level is required by the City's General Plan Noise Element to be mitigated to below 65 dBA CNEL.

With implementation of PDF-NOI-1, residential units (Buildings 1 and 2) that front N. Hollywood Way would include a minimum 4-foot-tall noise barrier for outdoor active use areas such as balconies. Noise barriers would provide a minimum 5 dBA reduction in noise, reducing outdoor noise to less-than-significant levels. Implementation of PDF-NOI-2 assumes that windows and doors remain closed to obtain maximum noise level reductions in interior spaces. Standard buildings in warm climate areas would provide a 24 dBA exterior-to-interior noise attenuation with windows and doors closed, and 12 dBA noise attenuation with windows open.[20] Thus, with implementation of PDF-NOI-2, residential units would be able to utilize mechanical ventilation, allowing windows to remain closed for long periods of time. With windows closed, residential units with standard STC-28 rated windows would provide a 24 dBA exterior-to-interior reduction in noise levels. Window upgrades to a minimum STC-30 rating would provide an additional 2 dBA noise level reduction for a total exterior-to-interior reduction of 26 dBA with windows closed. Consistent with General Plan noise control measures (General Plan Noise Element Table N-5), interior noise exposure within future on-site residential units would be minimized by mounting windows and sliding glass doors in low air infiltration rated frames, exterior doors are solid core with weather stripping and seals, and roof or attic vents facing the noise sources of concern would be boxed or provided with baffling. With incorporation of the above Project Design Features, future on-site residential units would not be exposed to excessive noise levels related to combined roadway-, rail-, or airport-related noise and impacts would be less than significant.

# 9. Mitigation Measures

## 9.1 Noise

### Construction

The following mitigation measures are required to reduce the construction noise levels at noise-sensitive receptors R1, R3, and R6.

[20] U.S. Environmental Protection Agency, *Levels Document, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, March 1974.

**MM-NOI-1**: The following noise reduction measures shall be implemented for the duration of construction activities:

Prior to commencement of demolition, the Project shall provide a 15-foot noise barrier along the southwestern corner of the Project Site, equipped with noise blankets rated to achieve sound level reductions of at least 15 dBA. The 15-foot noise barrier shall block all line of sight of construction equipment to receptors R1 and R3 and extend 100 feet north and 400 feet east along Valhalla Drive.

Limit the number of heavy-duty equipment operating at the same time within 200 feet of the southwestern corner of the Project Site to a maximum of 5.

Limit the number of heavy-duty equipment operating at the same time within 200 feet of the southeastern corner of the Project Site to a maximum of 5.

For heavy-duty construction equipment operating within 200 feet of the southwestern corner of the Project Site, utilize portable noise blankets to be placed on equipment engines to dampen engine noise.

**MM-NOI-2:** Prior to issuance of grading permits, the Project Applicant will incorporate the following measures as a note on the grading plan cover sheet to ensure that the greatest distance between noise sources and sensitive receptors during construction activities have been achieved.

Construction equipment, fixed or mobile, shall be equipped with properly operating and maintained noise mufflers consistent with manufacturers' standards.

Construction staging areas shall be located away from off-site sensitive uses during project construction.

The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site, whenever feasible.

### Operations

Project operations would result in less than significant impacts. No mitigation measures are required.

## 9.2 Vibration

### Construction

Construction vibration impacts would be less than significant. No mitigation measures are required.

### Operations

Vibration impacts would be less than significant. No mitigation measures are required.

# 10. Level of Significance after Mitigation

## 10.1 Project Construction

Mitigation Measure MM-NOI-1 would reduce the construction noise levels at receptor locations R1, R3, and R6. Prior to mitigation, the construction noise levels at receptor locations R1, R3, and R6 would exceed the threshold of 5 dBA $L_{eq}$ over the ambient level by 19 dBA, 6 dBA, and 3 dBA, respectively. With implementation of Mitigation Measure MM-NOI-1 would reduce construction noise levels as follows: a 15-foot noise barrier would provide a reduction of 15 dBA; limitation of heavy-duty equipment within 200 feet of the southwestern corner of the Project Site would provide a 3 dBA reduction; and the use of portable noise blankets shielding heavy-duty equipment within 200 feet of the southwestern corner of the Project Site would provide a 3 dBA reduction. Thus, implementation of Mitigation Measure MM-NOI-1 would result in a total reduction of 21 dBA at receptor location R1. The 15-foot noise barrier along Valhalla Drive would provide a 15 dBA reduction at receptor R3. Limiting the use of heavy-duty construction equipment at the southeastern corner of the Project Site would reduce construction noise at R6 by 3 dBA. In addition, the Project would implement MM-NOI-2 to further reduce construction noise levels to ensure that construction noise is minimized to the extent feasible. Therefore, with implementation of Mitigation Measures MM-NOI-1 and MM-NOI-2, the construction noise levels at receptor locations R1, R3, and R6 would be reduced by 21 dBA, 15 dBA, and 3 dBA, respectively, so as to not exceed the significance thresholds. Impacts would be less than significant with mitigation incorporated.

# 11. References

*California Code of Regulations*, Title 14, Section 15168(c).

California Department of Transportation (Caltrans), *Technical Noise Supplement (TeNS)*, September 2013.

Carlberg Associates, *Tree Inventory Report 2311 Hollywood Way*, May 25, 2021 [provided as Appendix B to this SCEA].

City of Burbank, *Burbank Municipal Code*.

———, *Burbank2035 General Plan*, Noise Element, adopted February 19, 2013, https://www.burbankca.gov/documents/173607/0/Burbank2035+General+Plan.pdf/139656b0-80e9-3b11-dc6d-751642c85b38?t=1616616672474, accessed June 15, 2021.

Coffman Associates, *Bob Hope Airport 14 CFR Part 150 Study, Noise Exposure Map Update*, April 2013.

Egan, M. David, *Architectural Acoustics*, 1988.

Federal Highway Administration, *Roadway Construction Noise Model User's Guide*, 2006.

Federal Transit Administration (FTA), *Transit Noise and Vibration Impact Assessment*, September 2018.

Gibson Transportation Consulting Inc., *Draft Transportation Study for the 2311 N. Hollywood Way Mixed-Use Project*, June 2021.

U.S. Environmental Protection Agency, *EPA Identifies Noise Levels Affecting Health and Welfare*, April 1974.

———, *Levels Document, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, March 1974.

———, *Protective Noise Levels, Condensed Version of EPA Levels Document* (EPA 550/9-79-100), November 1978.

INTENTIONALLY BLANK

# Appendix A
## Noise Modeling Data

## Summary

| | |
|---|---|
| **File Name on Meter** | R1 |
| **File Name on PC** | SLM_0005055_LxT_Data_086.00.ldbin |
| **Serial Number** | 0005055 |
| **Model** | SoundTrack LxT® |
| **Firmware Version** | 2.402 |
| **User** | |
| **Location** | 2311 N Hollywood Way |
| **Job Description** | |
| **Note** | |

## Measurement

| | |
|---|---|
| **Description** | |
| **Start** | 2021-04-06 09:33:44 |
| **Stop** | 2021-04-06 09:48:44 |
| **Duration** | 00:15:00.0 |
| **Run Time** | 00:15:00.0 |
| **Pause** | 00:00:00.0 |
| | |
| **Pre Calibration** | 2021-04-06 09:26:58 |
| **Post Calibration** | None |
| **Calibration Deviation** | --- |

## Overall Settings

| | | | | |
|---|---|---|---|---|
| **RMS Weight** | A Weighting | | | |
| **Peak Weight** | A Weighting | | | |
| **Detector** | Slow | | | |
| **Preamp** | PRMLxT1 | | | |
| **Microphone Correction** | Off | | | |
| **Integration Method** | Exponential | | | |
| **OBA Range** | Normal | | | |
| **OBA Bandwidth** | 1/1 and 1/3 | | | |
| **OBA Freq. Weighting** | A Weighting | | | |
| **OBA Max Spectrum** | Bin Max | | | |
| **Overload** | 144.6 dB | | | |
| | **A** | **C** | **Z** | |
| **Under Range Peak** | **100.6** | 97.6 | 102.6 | dB |
| **Under Range Limit** | **37.8** | 37.4 | 44.5 | dB |
| **Noise Floor** | 28.7 | 28.3 | 35.4 | dB |

## Results

| | | |
|---|---|---|
| **LASeq** | 49.9 dB | |
| **LASE** | 79.4 dB | |
| **EAS** | 9.710 µPa²h | |
| **EAS8** | 310.721 µPa²h | |
| **EAS40** | 1.554 mPa²h | |
| **LApeak (max)** | 2021-04-06 09:42:23 | 87.4 dB |
| **LASmax** | 2021-04-06 09:42:23 | 63.2 dB |
| **LASmin** | 2021-04-06 09:45:57 | 46.2 dB |
| **SEA** | -99.9 dB | |
| | | |
| **LAS > 85.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **LAS > 115.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **LApeak > 135.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **LApeak > 137.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **LApeak > 140.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| | | |
| **LCSeq** | 63.8 dB | |
| **LASeq** | 49.9 dB | |
| **LCSeq - LASeq** | 13.9 dB | |
| **LAIeq** | 52.9 dB | |
| **LAeq** | 49.9 dB | |
| **LAIeq - LAeq** | 3.0 dB | |

| | **A** | | **C** | | **Z** | |
|---|---|---|---|---|---|---|
| | **dB** | **Time Stamp** | **dB** | **Time Stamp** | **dB** | **Time Stamp** |
| **Leq** | 49.9 | | | | | |
| **Ls(max)** | 63.2 | 2021/04/06 9:42:23 | | | | |
| **Ls(min)** | 46.2 | 2021/04/06 9:45:57 | | | | |
| **LPeak(max)** | 87.4 | 2021/04/06 9:42:23 | | | | |

| | |
|---|---|
| **# Overloads** | 0 |
| **Overload Duration** | 0.0 s |
| **# OBA Overloads** | 0 |
| **OBA Overload Duration** | 0.0 s |

## Summary

| | |
|---|---|
| **File Name on Meter** | R2 |
| **File Name on PC** | SLM_0005055_LxT_Data_091.01.ldbin |
| **Serial Number** | 0005055 |
| **Model** | SoundTrack LxT® |
| **Firmware Version** | 2.402 |
| **User** | |
| **Location** | 2311 N Hollywood Way |
| **Job Description** | |
| **Note** | |

## Measurement

| | |
|---|---|
| **Description** | |
| **Start** | 2021-04-06 11:24:26 |
| **Stop** | 2021-04-06 11:31:24 |
| **Duration** | 00:06:58.2 |
| **Run Time** | 00:06:58.2 |
| **Pause** | 00:00:00.0 |
| **Pre Calibration** | 2020-05-14 15:30:12 |
| **Post Calibration** | None |
| **Calibration Deviation** | --- |

## Overall Settings

| | | | |
|---|---|---|---|
| **RMS Weight** | A Weighting | | |
| **Peak Weight** | A Weighting | | |
| **Detector** | Slow | | |
| **Preamp** | PRMLxT1 | | |
| **Microphone Correction** | Off | | |
| **Integration Method** | Exponential | | |
| **OBA Range** | Normal | | |
| **OBA Bandwidth** | 1/1 and 1/3 | | |
| **OBA Freq. Weighting** | A Weighting | | |
| **OBA Max Spectrum** | Bin Max | | |
| **Overload** | 144.6 dB | | |
| | **A** | **C** | **Z** |
| **Under Range Peak** | **100.6** | 97.6 | 102.6 dB |
| **Under Range Limit** | **37.8** | 37.4 | 44.5 dB |
| **Noise Floor** | 28.7 | 28.3 | 35.4 dB |

## Results

| | | |
|---|---|---|
| **LASeq** | 82.7 dB | |
| **LASE** | 109.0 dB | |
| **EAS** | 8.746 mPa²h | |
| **EAS8** | 602.275 mPa²h | |
| **EAS40** | 3.011 Pa²h | |
| **LApeak (max)** | 2021-04-06 11:31:04 | 111.4 dB |
| **LASmax** | 2021-04-06 11:30:37 | 98.8 dB |
| **LASmin** | 2021-04-06 11:25:02 | 47.8 dB |
| **SEA** | -99.9 dB | |

| | | |
|---|---|---|
| **LAS > 85.0 dB (Exceedance Counts / Duration)** | 3 | 78.5 s |
| **LAS > 115.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **LApeak > 135.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **LApeak > 137.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **LApeak > 140.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |

| | |
|---|---|
| **LCSeq** | 87.7 dB |
| **LASeq** | 82.7 dB |
| **LCSeq - LASeq** | 5.0 dB |
| **LAIeq** | 85.3 dB |
| **LAeq** | 82.8 dB |
| **LAIeq - LAeq** | 2.5 dB |

| | A | | C | | Z | |
|---|---|---|---|---|---|---|
| | **dB** | **Time Stamp** | **dB** | **Time Stamp** | **dB** | **Time Stamp** |
| **Leq** | 82.8 | | | | | |
| **Ls(max)** | 98.8 | 2021/04/06 11:30:37 | | | | |
| **Ls(min)** | 47.8 | 2021/04/06 11:25:02 | | | | |
| **LPeak(max)** | 111.4 | 2021/04/06 11:31:04 | | | | |

| | |
|---|---|
| **# Overloads** | 0 |
| **Overload Duration** | 0.0 s |
| **# OBA Overloads** | 0 |
| **OBA Overload Duration** | 0.0 s |

## Summary

| | |
|---|---|
| **File Name on Meter** | R3 |
| **File Name on PC** | SLM_0005055_LxT_Data_090.01.ldbin |
| **Serial Number** | 0005055 |
| **Model** | SoundTrack LxT® |
| **Firmware Version** | 2.402 |
| **User** | |
| **Location** | 2311 N Hollywood Way |
| **Job Description** | |
| **Note** | |

## Measurement

| | |
|---|---|
| **Description** | |
| **Start** | 2021-04-06 11:06:27 |
| **Stop** | 2021-04-06 11:21:27 |
| **Duration** | 00:15:00.0 |
| **Run Time** | 00:15:00.0 |
| **Pause** | 00:00:00.0 |
| | |
| **Pre Calibration** | 2020-05-14 15:30:12 |
| **Post Calibration** | None |
| **Calibration Deviation** | --- |

## Overall Settings

| | | | | |
|---|---|---|---|---|
| **RMS Weight** | A Weighting | | | |
| **Peak Weight** | A Weighting | | | |
| **Detector** | Slow | | | |
| **Preamp** | PRMLxT1 | | | |
| **Microphone Correction** | Off | | | |
| **Integration Method** | Exponential | | | |
| **OBA Range** | Normal | | | |
| **OBA Bandwidth** | 1/1 and 1/3 | | | |
| **OBA Freq. Weighting** | A Weighting | | | |
| **OBA Max Spectrum** | Bin Max | | | |
| **Overload** | 144.6 dB | | | |
| | **A** | **C** | **Z** | |
| **Under Range Peak** | **100.6** | 97.6 | 102.6 | dB |
| **Under Range Limit** | **37.8** | 37.4 | 44.5 | dB |
| **Noise Floor** | 28.7 | 28.3 | 35.4 | dB |

## Results

| | | |
|---|---|---|
| **LASeq** | 63.7 dB | |
| **LASE** | 93.3 dB | |
| **EAS** | 235.709 µPa²h | |
| **EAS8** | 7.543 mPa²h | |
| **EAS40** | 37.713 mPa²h | |
| **LApeak (max)** | 2021-04-06 11:15:00 | 98.1 dB |
| **LASmax** | 2021-04-06 11:15:02 | 83.3 dB |
| **LASmin** | 2021-04-06 11:13:52 | 44.9 dB |
| **SEA** | -99.9 dB | |
| | | |
| **LAS > 85.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **LAS > 115.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **LApeak > 135.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **LApeak > 137.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **LApeak > 140.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| | | |
| **LCSeq** | 73.1 dB | |
| **LASeq** | 63.7 dB | |
| **LCSeq - LASeq** | 9.4 dB | |
| **LAIeq** | 65.7 dB | |
| **LAeq** | 63.7 dB | |
| **LAIeq - LAeq** | 2.0 dB | |

| | A | | C | | Z | |
|---|---|---|---|---|---|---|
| | dB | Time Stamp | dB | Time Stamp | dB | Time Stamp |
| **Leq** | 63.7 | | | | | |
| **LS(max)** | 83.3 | 2021/04/06 11:15:02 | | | | |
| **LS(min)** | 44.9 | 2021/04/06 11:13:52 | | | | |
| **LPeak(max)** | 98.1 | 2021/04/06 11:15:00 | | | | |

| | |
|---|---|
| **# Overloads** | 0 |
| **Overload Duration** | 0.0 s |
| **# OBA Overloads** | 0 |
| **OBA Overload Duration** | 0.0 s |

| Summary | |
|---|---|
| **File Name on Meter** | R4 |
| **File Name on PC** | SLM_0005055_LxT_Data_087.00.ldbin |
| **Serial Number** | 0005055 |
| **Model** | SoundTrack LxT® |
| **Firmware Version** | 2.402 |
| **User** | |
| **Location** | 2311 N Hollywood Way |
| **Job Description** | |
| **Note** | |

| Measurement | |
|---|---|
| **Description** | |
| **Start** | 2021-04-06 09:56:59 |
| **Stop** | 2021-04-06 10:11:59 |
| **Duration** | 00:15:00.0 |
| **Run Time** | 00:15:00.0 |
| **Pause** | 00:00:00.0 |
| **Pre Calibration** | 2020-05-14 15:30:12 |
| **Post Calibration** | None |
| **Calibration Deviation** | --- |

| Overall Settings | | | | |
|---|---|---|---|---|
| **RMS Weight** | A Weighting | | | |
| **Peak Weight** | A Weighting | | | |
| **Detector** | Slow | | | |
| **Preamp** | PRMLxT1 | | | |
| **Microphone Correction** | Off | | | |
| **Integration Method** | Exponential | | | |
| **OBA Range** | Normal | | | |
| **OBA Bandwidth** | 1/1 and 1/3 | | | |
| **OBA Freq. Weighting** | A Weighting | | | |
| **OBA Max Spectrum** | Bin Max | | | |
| **Overload** | 144.6 | dB | | |
| | **A** | | **C** | **Z** |
| **Under Range Peak** | **100.6** | | 97.6 | 102.6 dB |
| **Under Range Limit** | **37.8** | | 37.4 | 44.5 dB |
| **Noise Floor** | 28.7 | | 28.3 | 35.4 dB |

| Results | | | |
|---|---|---|---|
| **LASeq** | 71.0 dB | | |
| **LASE** | 100.5 dB | | |
| **EAS** | 1.245 mPa²h | | |
| **EAS8** | 39.833 mPa²h | | |
| **EAS40** | 199.164 mPa²h | | |
| **LApeak (max)** | 2021-04-06 10:01:16 | 101.2 dB | |
| **LASmax** | 2021-04-06 10:01:15 | 86.9 dB | |
| **LASmin** | 2021-04-06 10:02:30 | 52.2 dB | |
| **SEA** | -99.9 dB | | |
| **LAS > 85.0 dB (Exceedance Counts / Duration)** | 1 | 2.6 s | |
| **LAS > 115.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s | |
| **LApeak > 135.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s | |
| **LApeak > 137.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s | |
| **LApeak > 140.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s | |
| **LCSeq** | 78.4 dB | | |
| **LASeq** | 71.0 dB | | |
| **LCSeq - LASeq** | 7.5 dB | | |
| **LAIeq** | 72.9 dB | | |
| **LAeq** | 70.9 dB | | |
| **LAIeq - LAeq** | 2.0 dB | | |

| | A | | C | | Z | |
|---|---|---|---|---|---|---|
| | dB | Time Stamp | dB | Time Stamp | dB | Time Stamp |
| **Leq** | 70.9 | | | | | |
| **LS(max)** | 86.9 | 2021/04/06 10:01:15 | | | | |
| **LS(min)** | 52.2 | 2021/04/06 10:02:30 | | | | |
| **LPeak(max)** | 101.2 | 2021/04/06 10:01:16 | | | | |

| | |
|---|---|
| **# Overloads** | 0 |
| **Overload Duration** | 0.0 s |
| **# OBA Overloads** | 0 |
| **OBA Overload Duration** | 0.0 s |

## Summary

| | |
|---|---|
| **File Name on Meter** | R5 |
| **File Name on PC** | SLM_0005055_LxT_Data_089.01.ldbin |
| **Serial Number** | 0005055 |
| **Model** | SoundTrack LxT® |
| **Firmware Version** | 2.402 |
| **User** | |
| **Location** | 2311 N Hollywood Way |
| **Job Description** | |
| **Note** | |

## Measurement

| | |
|---|---|
| **Description** | |
| **Start** | 2021-04-06 10:43:26 |
| **Stop** | 2021-04-06 10:58:26 |
| **Duration** | 00:15:00.0 |
| **Run Time** | 00:15:00.0 |
| **Pause** | 00:00:00.0 |
| | |
| **Pre Calibration** | 2020-05-14 15:30:12 |
| **Post Calibration** | None |
| **Calibration Deviation** | --- |

## Overall Settings

| | | | | |
|---|---|---|---|---|
| **RMS Weight** | A Weighting | | | |
| **Peak Weight** | A Weighting | | | |
| **Detector** | Slow | | | |
| **Preamp** | PRMLxT1 | | | |
| **Microphone Correction** | Off | | | |
| **Integration Method** | Exponential | | | |
| **OBA Range** | Normal | | | |
| **OBA Bandwidth** | 1/1 and 1/3 | | | |
| **OBA Freq. Weighting** | A Weighting | | | |
| **OBA Max Spectrum** | Bin Max | | | |
| **Overload** | 144.6 dB | | | |
| | **A** | **C** | **Z** | |
| **Under Range Peak** | **100.6** | 97.6 | 102.6 | dB |
| **Under Range Limit** | **37.8** | 37.4 | 44.5 | dB |
| **Noise Floor** | 28.7 | 28.3 | 35.4 | dB |

## Results

| | | |
|---|---|---|
| **LASeq** | 71.1 dB | |
| **LASE** | 100.7 dB | |
| **EAS** | 1.298 mPa²h | |
| **EAS8** | 41.548 mPa²h | |
| **EAS40** | 207.738 mPa²h | |
| **LApeak (max)** | 2021-04-06 10:54:02 | 110.8 dB |
| **LASmax** | 2021-04-06 10:56:01 | 89.0 dB |
| **LASmin** | 2021-04-06 10:52:26 | 58.3 dB |
| **SEA** | -99.9 dB | |
| | | |
| **LAS > 85.0 dB (Exceedance Counts / Duration)** | 1 | 2.9 s |
| **LAS > 115.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **LApeak > 135.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **LApeak > 137.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **LApeak > 140.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| | | |
| **LCSeq** | 80.4 dB | |
| **LASeq** | 71.1 dB | |
| **LCSeq - LASeq** | 9.3 dB | |
| **LAIeq** | 73.1 dB | |
| **LAeq** | 71.1 dB | |
| **LAIeq - LAeq** | 2.0 dB | |

| | A | | C | | Z | |
|---|---|---|---|---|---|---|
| | **dB** | **Time Stamp** | **dB** | **Time Stamp** | **dB** | **Time Stamp** |
| **Leq** | 71.1 | | | | | |
| **LS(max)** | 89.0 | 2021/04/06 10:56:01 | | | | |
| **LS(min)** | 58.3 | 2021/04/06 10:52:26 | | | | |
| **LPeak(max)** | 110.8 | 2021/04/06 10:54:02 | | | | |

| | |
|---|---|
| **# Overloads** | 0 |
| **Overload Duration** | 0.0 s |
| **# OBA Overloads** | 0 |
| **OBA Overload Duration** | 0.0 s |

## Summary

| | |
|---|---|
| **File Name on Meter** | R6 |
| **File Name on PC** | SLM_0005055_LxT_Data_088.00.ldbin |
| **Serial Number** | 0005055 |
| **Model** | SoundTrack LxT® |
| **Firmware Version** | 2.402 |
| **User** | |
| **Location** | 2311 N Hollywood Way |
| **Job Description** | |
| **Note** | |

## Measurement

| | |
|---|---|
| **Description** | |
| **Start** | 2021-04-06 10:16:28 |
| **Stop** | 2021-04-06 10:31:28 |
| **Duration** | 00:15:00.0 |
| **Run Time** | 00:15:00.0 |
| **Pause** | 00:00:00.0 |
| **Pre Calibration** | 2020-05-14 15:30:12 |
| **Post Calibration** | None |
| **Calibration Deviation** | --- |

## Overall Settings

| | | | | |
|---|---|---|---|---|
| **RMS Weight** | A Weighting | | | |
| **Peak Weight** | A Weighting | | | |
| **Detector** | Slow | | | |
| **Preamp** | PRMLxT1 | | | |
| **Microphone Correction** | Off | | | |
| **Integration Method** | Exponential | | | |
| **OBA Range** | Normal | | | |
| **OBA Bandwidth** | 1/1 and 1/3 | | | |
| **OBA Freq. Weighting** | A Weighting | | | |
| **OBA Max Spectrum** | Bin Max | | | |
| **Overload** | 144.6 dB | | | |
| | **A** | **C** | **Z** | |
| **Under Range Peak** | **100.6** | 97.6 | 102.6 | dB |
| **Under Range Limit** | **37.8** | 37.4 | 44.5 | dB |
| **Noise Floor** | 28.7 | 28.3 | 35.4 | dB |

## Results

| | | |
|---|---|---|
| **$LAS_{eq}$** | 49.8 dB | |
| **LASE** | 79.4 dB | |
| **EAS** | 9.567 µPa²h | |
| **EAS8** | 306.148 µPa²h | |
| **EAS40** | 1.531 mPa²h | |
| **$LA_{peak\ (max)}$** | 2021-04-06 10:19:04 | 81.7 dB |
| **$LAS_{max}$** | 2021-04-06 10:29:20 | 59.1 dB |
| **$LAS_{min}$** | 2021-04-06 10:24:26 | 46.9 dB |
| **SEA** | -99.9 dB | |
| **LAS > 85.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **LAS > 115.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **$LA_{peak}$ > 135.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **$LA_{peak}$ > 137.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **$LA_{peak}$ > 140.0 dB (Exceedance Counts / Duration)** | 0 | 0.0 s |
| **$LC_{Seq}$** | 63.7 dB | |
| **$LA_{Seq}$** | 49.8 dB | |
| **$LC_{Seq}$ - $LA_{Seq}$** | 13.9 dB | |
| **$LAI_{eq}$** | 51.7 dB | |
| **$LA_{eq}$** | 49.8 dB | |
| **$LAI_{eq}$ - $LA_{eq}$** | 1.9 dB | |

| | A | | C | | Z | |
|---|---|---|---|---|---|---|
| | **dB** | **Time Stamp** | **dB** | **Time Stamp** | **dB** | **Time Stamp** |
| **$L_{eq}$** | 49.8 | | | | | |
| **$L_{S(max)}$** | 59.1 | 2021/04/06 10:29:20 | | | | |
| **$L_{S(min)}$** | 46.9 | 2021/04/06 10:24:26 | | | | |
| **$L_{Peak(max)}$** | 81.7 | 2021/04/06 10:19:04 | | | | |

| | |
|---|---|
| **# Overloads** | 0 |
| **Overload Duration** | 0.0 s |
| **# OBA Overloads** | 0 |
| **OBA Overload Duration** | 0.0 s |

## Project: 2311 N Hollywood Way

**Construction Noise Impact on Sensitive Receptors**

***Parameters***

| | | |
|---|---|---|
| **Construction Hours:** | 8 | Daytime hours (7 am to 7 pm) |
| | 0 | Evening hours (7 pm to 10 pm) |
| | 0 | Nighttime hours (10 pm to 7 am) |
| **Leq to L10 factor** | 3 | |

| | | | | R1 | | | | | R2 | | | | | R3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Construction Phase*** **Equipment Type** | **No. of Equip.** | **Reference Noise Level at 50ft, Lmax** | **Acoustical Usage Factor** | **Distance (ft)** | **Lmax** | **Leq** | **L10** | **Estimated Noise Shielding, dBA** | **Distance (ft)** | **Lmax** | **Leq** | **L11** | **Estimated Noise Shielding, dBA** | **Distance (ft)** | **Lmax** | **Leq** | **L12** | **Estimated Noise Shielding, dBA** |
| ***Demolition*** | | | | | ***69*** | ***64*** | | | | ***64*** | ***60*** | | | | ***70*** | ***66*** | | |
| Tractor/Loader/Backhoe | 1 | 80 | 25% | 380 | 62 | 56 | 59 | 0 | 700 | 57 | 51 | 54 | 0 | 330 | 64 | 58 | 61 | 0 |
| Excavator | 2 | 81 | 40% | 380 | 66 | 62 | 65 | 0 | 700 | 61 | 57 | 60 | 0 | 330 | 68 | 64 | 67 | 0 |
| Dump Truck | 1 | 84 | 40% | 750 | 60 | 56 | 59 | 0 | 1000 | 58 | 54 | 57 | 0 | 630 | 62 | 58 | 61 | 0 |
| Vacuum Street Sweeper | 1 | 82 | 10% | 1300 | 54 | 44 | 47 | 0 | 1400 | 53 | 43 | 46 | 0 | 990 | 56 | 46 | 49 | 0 |
| ***Site Preparation*** | | | | | ***64*** | ***58*** | | | | ***60*** | ***54*** | | | | ***65*** | ***60*** | | |
| Tractor/Loader/Backhoe | 1 | 80 | 25% | 380 | 62 | 56 | 59 | 0 | 700 | 57 | 51 | 54 | 0 | 330 | 64 | 58 | 61 | 0 |
| Excavator | 1 | 81 | 40% | 750 | 57 | 53 | 56 | 0 | 1000 | 55 | 51 | 54 | 0 | 630 | 59 | 55 | 58 | 0 |
| Vacuum Street Sweeper | 1 | 82 | 10% | 1300 | 54 | 44 | 47 | 0 | 1400 | 53 | 43 | 46 | 0 | 990 | 56 | 46 | 49 | 0 |
| ***Grading/Excavation*** | | | | | ***69*** | ***64*** | | | | ***65*** | ***60*** | | | | ***71*** | ***65*** | | |
| Compactor (ground) | 1 | 83 | 20% | 380 | 65 | 58 | 61 | 0 | 700 | 60 | 53 | 56 | 0 | 330 | 67 | 60 | 63 | 0 |
| Excavator | 1 | 81 | 40% | 380 | 63 | 59 | 62 | 0 | 700 | 58 | 54 | 57 | 0 | 330 | 65 | 61 | 64 | 0 |
| Dump Truck | 1 | 84 | 40% | 750 | 60 | 56 | 59 | 0 | 1000 | 58 | 54 | 57 | 0 | 630 | 62 | 58 | 61 | 0 |
| Rubber Tired Loader | 2 | 79 | 40% | 1300 | 54 | 50 | 53 | 0 | 1400 | 53 | 49 | 52 | 0 | 990 | 56 | 52 | 55 | 0 |
| Scrapers | 1 | 84 | 40% | 750 | 60 | 56 | 59 | 0 | 1000 | 58 | 54 | 57 | 0 | 630 | 62 | 58 | 61 | 0 |
| Vacuum Street Sweeper | 1 | 82 | 10% | 1300 | 54 | 44 | 47 | 0 | 1400 | 53 | 43 | 46 | 0 | 990 | 56 | 46 | 49 | 0 |
| ***Drainage/Utilities/Trenching*** | | | | | ***73*** | ***66*** | | | | ***68*** | ***62*** | | | | ***74*** | ***68*** | | |
| Tractor/Loader/Backhoe | 1 | 80 | 25% | 380 | 62 | 56 | 59 | 0 | 700 | 57 | 51 | 54 | 0 | 330 | 64 | 58 | 61 | 0 |
| Concrete Saw | 1 | 90 | 20% | 380 | 72 | 65 | 68 | 0 | 700 | 67 | 60 | 63 | 0 | 330 | 74 | 67 | 70 | 0 |
| Forklift | 1 | 75 | 10% | 750 | 51 | 41 | 44 | 0 | 1000 | 49 | 39 | 42 | 0 | 630 | 53 | 43 | 46 | 0 |
| Generator Sets | 1 | 81 | 50% | 750 | 57 | 54 | 57 | 0 | 1000 | 55 | 52 | 55 | 0 | 630 | 59 | 56 | 59 | 0 |
| Vacuum Street Sweeper | 1 | 82 | 10% | 1300 | 54 | 44 | 47 | 0 | 1400 | 53 | 43 | 46 | 0 | 990 | 56 | 46 | 49 | 0 |
| Other Equipment | 1 | 85 | 50% | 1300 | 57 | 54 | 57 | 0 | 1400 | 56 | 53 | 56 | 0 | 990 | 59 | 56 | 59 | 0 |
| ***Foundations/Concrete Pour*** | | | | | ***73*** | ***74*** | | | | ***69*** | ***70*** | | | | ***75*** | ***75*** | | |
| Cement and Mortar Mixers | 9 | 79 | 40% | 380 | 71 | 67 | 70 | 0 | 700 | 66 | 62 | 65 | 0 | 330 | 72 | 68 | 71 | 0 |
| Cement and Mortar Mixers | 10 | 79 | 40% | 750 | 65 | 61 | 64 | 0 | 1000 | 63 | 59 | 62 | 0 | 630 | 67 | 63 | 66 | 0 |
| Cement and Mortar Mixers | 9 | 79 | 40% | 1300 | 60 | 56 | 59 | 0 | 1400 | 60 | 56 | 59 | 0 | 990 | 63 | 59 | 62 | 0 |
| Cranes | 2 | 81 | 16% | 380 | 66 | 58 | 61 | 0 | 700 | 61 | 53 | 56 | 0 | 330 | 68 | 60 | 63 | 0 |
| Forklift | 1 | 75 | 10% | 750 | 51 | 41 | 44 | 0 | 1000 | 49 | 39 | 42 | 0 | 630 | 53 | 43 | 46 | 0 |
| Generator Sets | 1 | 81 | 50% | 750 | 57 | 54 | 57 | 0 | 1000 | 55 | 52 | 55 | 0 | 630 | 59 | 56 | 59 | 0 |
| Front End Loader | 1 | 79 | 40% | 1300 | 51 | 47 | 50 | 0 | 1400 | 50 | 46 | 49 | 0 | 990 | 53 | 49 | 52 | 0 |
| Vacuum Street Sweeper | 1 | 82 | 10% | 1300 | 54 | 44 | 47 | 0 | 1400 | 53 | 43 | 46 | 0 | 990 | 56 | 46 | 49 | 0 |
| ***Building Construction*** | | | | | ***69*** | ***63*** | | | | ***64*** | ***59*** | | | | ***70*** | ***64*** | | |
| Cement and Mortar Mixers | 1 | 79 | 40% | 380 | 61 | 57 | 60 | 0 | 700 | 56 | 52 | 55 | 0 | 330 | 63 | 59 | 62 | 0 |
| Cranes | 2 | 81 | 16% | 380 | 66 | 58 | 61 | 0 | 700 | 61 | 53 | 56 | 0 | 330 | 68 | 60 | 63 | 0 |
| Forklift | 1 | 75 | 10% | 750 | 51 | 41 | 44 | 0 | 1000 | 49 | 39 | 42 | 0 | 630 | 53 | 43 | 46 | 0 |
| Generator Sets | 2 | 81 | 50% | 750 | 60 | 57 | 60 | 0 | 1000 | 58 | 55 | 58 | 0 | 630 | 62 | 59 | 62 | 0 |
| Front End Loader | 1 | 79 | 40% | 1300 | 51 | 47 | 50 | 0 | 1400 | 50 | 46 | 49 | 0 | 990 | 53 | 49 | 52 | 0 |
| Vacuum Street Sweeper | 1 | 82 | 10% | 1300 | 54 | 44 | 47 | 0 | 1400 | 53 | 43 | 46 | 0 | 990 | 56 | 46 | 49 | 0 |
| ***Architectural Coating*** | | | | | ***66*** | ***61*** | | | | ***61*** | ***56*** | | | | ***67*** | ***63*** | | |
| Air Compressor | 3 | 78 | 40% | 380 | 65 | 61 | 64 | 0 | 700 | 60 | 56 | 59 | 0 | 330 | 66 | 62 | 65 | 0 |
| Vacuum Street Sweeper | 1 | 82 | 10% | 750 | 58 | 48 | 51 | 0 | 1000 | 56 | 46 | 49 | 0 | 630 | 60 | 50 | 53 | 0 |
| ***Paving*** | | | | | ***64*** | ***54*** | | | | ***59*** | ***49*** | | | | ***66*** | ***56*** | | |
| Vacuum Street Sweeper | 1 | 82 | 10% | 380 | 64 | 54 | 57 | 0 | 700 | 59 | 49 | 52 | 0 | 330 | 66 | 56 | 59 | 0 |
| ***Landscaping*** | | | | | ***65*** | ***57*** | | | | ***61*** | ***54*** | | | | ***67*** | ***59*** | | |
| Rubber Tired Loader | 1 | 79 | 40% | 750 | 55 | 51 | 54 | 0 | 1000 | 53 | 49 | 52 | 0 | 630 | 57 | 53 | 56 | 0 |
| Front End Loader | 1 | 79 | 40% | 750 | 55 | 51 | 54 | 0 | 1000 | 53 | 49 | 52 | 0 | 630 | 57 | 53 | 56 | 0 |
| Vacuum Street Sweeper | 1 | 82 | 10% | 380 | 64 | 54 | 57 | 0 | 700 | 59 | 49 | 52 | 0 | 330 | 66 | 56 | 59 | 0 |

| | R4 | | | | | R5 | | | | | R6 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Construction Phase*** **Equipment Type** | **Distance (ft)** | **Lmax** | **Leq** | **L11** | **Estimated Noise Shielding, dBA** | **Distance (ft)** | **Lmax** | **Leq** | **L12** | **Estimated Noise Shielding, dBA** | **Distance (ft)** | **Lmax** | **Leq** | **L13** | **Estimated Noise Shielding, dBA** |
| ***Demolition*** | | ***54*** | ***50*** | | | | ***64*** | ***59*** | | | | ***52*** | ***48*** | | |
| Tractor/Loader/Backhoe | 700 | 47 | 41 | 44 | 10 | 715 | 57 | 51 | 54 | 0 | 820 | 46 | 40 | 43 | 10 |
| Excavator | 700 | 51 | 47 | 50 | 10 | 715 | 61 | 57 | 60 | 0 | 820 | 50 | 46 | 49 | 10 |
| Dump Truck | 950 | 48 | 44 | 47 | 10 | 1100 | 57 | 53 | 56 | 0 | 1400 | 45 | 41 | 44 | 10 |
| Vacuum Street Sweeper | 1200 | 44 | 34 | 37 | 10 | 1500 | 52 | 42 | 45 | 0 | 1800 | 41 | 31 | 34 | 10 |
| ***Site Preparation*** | | ***51*** | ***45*** | | | | ***60*** | ***54*** | | | | ***48*** | ***42*** | | |
| Tractor/Loader/Backhoe | 700 | 47 | 41 | 44 | 10 | 715 | 57 | 51 | 54 | 0 | 820 | 46 | 40 | 43 | 10 |
| Excavator | 950 | 45 | 41 | 44 | 10 | 1100 | 54 | 50 | 53 | 0 | 1400 | 42 | 38 | 41 | 10 |
| Vacuum Street Sweeper | 1200 | 44 | 34 | 37 | 10 | 1500 | 52 | 42 | 45 | 0 | 1800 | 41 | 31 | 34 | 10 |
| ***Grading/Excavation*** | | ***56*** | ***51*** | | | | ***65*** | ***60*** | | | | ***53*** | ***48*** | | |
| Compactor (ground) | 700 | 50 | 43 | 46 | 10 | 715 | 60 | 53 | 56 | 0 | 820 | 49 | 42 | 45 | 10 |
| Excavator | 700 | 48 | 44 | 47 | 10 | 715 | 58 | 54 | 57 | 0 | 820 | 47 | 43 | 46 | 10 |
| Dump Truck | 950 | 48 | 44 | 47 | 10 | 1100 | 57 | 53 | 56 | 0 | 1400 | 45 | 41 | 44 | 10 |
| Rubber Tired Loader | 1200 | 44 | 40 | 43 | 10 | 1500 | 52 | 48 | 51 | 0 | 1800 | 41 | 37 | 40 | 10 |
| Scrapers | 950 | 48 | 44 | 47 | 10 | 1100 | 57 | 53 | 56 | 0 | 1400 | 45 | 41 | 44 | 10 |
| Vacuum Street Sweeper | 1200 | 44 | 34 | 37 | 10 | 1500 | 52 | 42 | 45 | 0 | 1800 | 41 | 31 | 34 | 10 |
| ***Drainage/Utilities/Trenching*** | | ***58*** | ***52*** | | | | ***68*** | ***62*** | | | | ***57*** | ***50*** | | |
| Tractor/Loader/Backhoe | 700 | 47 | 41 | 44 | 10 | 715 | 57 | 51 | 54 | 0 | 820 | 46 | 40 | 43 | 10 |
| Concrete Saw | 700 | 57 | 50 | 53 | 10 | 715 | 67 | 60 | 63 | 0 | 820 | 56 | 49 | 52 | 10 |
| Forklift | 950 | 39 | 29 | 32 | 10 | 1100 | 48 | 38 | 41 | 0 | 1400 | 36 | 26 | 29 | 10 |
| Generator Sets | 950 | 45 | 42 | 45 | 10 | 1100 | 54 | 51 | 54 | 0 | 1400 | 42 | 39 | 42 | 10 |
| Vacuum Street Sweeper | 1200 | 44 | 34 | 37 | 10 | 1500 | 52 | 42 | 45 | 0 | 1800 | 41 | 31 | 34 | 10 |
| Other Equipment | 1200 | 47 | 44 | 47 | 10 | 1500 | 55 | 52 | 55 | 0 | 1800 | 44 | 41 | 44 | 10 |
| ***Foundations/Concrete Pour*** | | ***60*** | ***60*** | | | | ***69*** | ***69*** | | | | ***57*** | ***58*** | | |
| Cement and Mortar Mixers | 700 | 56 | 52 | 55 | 10 | 715 | 65 | 61 | 64 | 0 | 820 | 54 | 50 | 53 | 10 |
| Cement and Mortar Mixers | 950 | 53 | 49 | 52 | 10 | 1100 | 62 | 58 | 61 | 0 | 1400 | 50 | 46 | 49 | 10 |
| Cement and Mortar Mixers | 1200 | 51 | 47 | 50 | 10 | 1500 | 59 | 55 | 58 | 0 | 1800 | 47 | 43 | 46 | 10 |
| Cranes | 700 | 51 | 43 | 46 | 10 | 715 | 61 | 53 | 56 | 0 | 820 | 50 | 42 | 45 | 10 |
| Forklift | 950 | 39 | 29 | 32 | 10 | 1100 | 48 | 38 | 41 | 0 | 1400 | 36 | 26 | 29 | 10 |
| Generator Sets | 950 | 45 | 42 | 45 | 10 | 1100 | 54 | 51 | 54 | 0 | 1400 | 42 | 39 | 42 | 10 |
| Front End Loader | 1200 | 41 | 37 | 40 | 10 | 1500 | 49 | 45 | 48 | 0 | 1800 | 38 | 34 | 37 | 10 |
| Vacuum Street Sweeper | 1200 | 44 | 34 | 37 | 10 | 1500 | 52 | 42 | 45 | 0 | 1800 | 41 | 31 | 34 | 10 |
| ***Building Construction*** | | ***55*** | ***49*** | | | | ***64*** | ***58*** | | | | ***52*** | ***47*** | | |
| Cement and Mortar Mixers | 700 | 46 | 42 | 45 | 10 | 715 | 56 | 52 | 55 | 0 | 820 | 45 | 41 | 44 | 10 |
| Cranes | 700 | 51 | 43 | 46 | 10 | 715 | 61 | 53 | 56 | 0 | 820 | 50 | 42 | 45 | 10 |
| Forklift | 950 | 39 | 29 | 32 | 10 | 1100 | 48 | 38 | 41 | 0 | 1400 | 36 | 26 | 29 | 10 |
| Generator Sets | 950 | 48 | 45 | 48 | 10 | 1100 | 57 | 54 | 57 | 0 | 1400 | 45 | 42 | 45 | 10 |
| Front End Loader | 1200 | 41 | 37 | 40 | 10 | 1500 | 49 | 45 | 48 | 0 | 1800 | 38 | 34 | 37 | 10 |
| Vacuum Street Sweeper | 1200 | 44 | 34 | 37 | 10 | 1500 | 52 | 42 | 45 | 0 | 1800 | 41 | 31 | 34 | 10 |
| ***Architectural Coating*** | | ***51*** | ***46*** | | | | ***61*** | ***56*** | | | | ***50*** | ***45*** | | |
| Air Compressor | 700 | 50 | 46 | 49 | 10 | 715 | 60 | 56 | 59 | 0 | 820 | 48 | 44 | 47 | 10 |
| Vacuum Street Sweeper | 950 | 46 | 36 | 39 | 10 | 1100 | 55 | 45 | 48 | 0 | 1400 | 43 | 33 | 36 | 10 |
| ***Paving*** | | ***49*** | ***39*** | | | | ***59*** | ***49*** | | | | ***48*** | ***38*** | | |
| Vacuum Street Sweeper | 700 | 49 | 39 | 42 | 10 | 715 | 59 | 49 | 52 | 0 | 820 | 48 | 38 | 41 | 10 |
| ***Landscaping*** | | ***51*** | ***44*** | | | | ***60*** | ***53*** | | | | ***49*** | ***41*** | | |
| Rubber Tired Loader | 950 | 43 | 39 | 42 | 10 | 1100 | 52 | 48 | 51 | 0 | 1400 | 40 | 36 | 39 | 10 |
| Front End Loader | 950 | 43 | 39 | 42 | 10 | 1100 | 52 | 48 | 51 | 0 | 1400 | 40 | 36 | 39 | 10 |
| Vacuum Street Sweeper | 700 | 49 | 39 | 42 | 10 | 715 | 59 | 49 | 52 | 0 | 820 | 48 | 38 | 41 | 10 |

### Overlapping Phase Noise Levels

| | R1 Lmax | R1 Leq | R2 Lmax | R2 Leq | R3 Lmax | R3 Leq | R4 Lmax | R4 Leq | R5 Lmax | R5 Leq | R6 Lmax | R6 Leq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Paving + Architectural Coating | ***68*** | ***62*** | ***63*** | ***57*** | ***70*** | ***63*** | ***53*** | ***47*** | ***63*** | ***57*** | ***52*** | ***46*** |
| Paving + Landscaping | ***68*** | ***59*** | ***63*** | ***55*** | ***69*** | ***61*** | ***53*** | ***45*** | ***63*** | ***55*** | ***51*** | ***43*** |
| **Maximum Combined Noise Levels** | **73** | **74** | **69** | **70** | **75** | **75** | **60** | **60** | **69** | **69** | **57** | **58** |

Source for Ref. Noise Levels: LA CEQA Guides, 2006 & FHWA RCNM, 2005

| | R1 | R2 | R3 | R4 | R5 | R6 |
|---|---|---|---|---|---|---|
| Ambient Noise Level (Leq) | 49.9 | 70.9 | 63.7 | 70.9 | 71.1 | 49.8 |
| Threshold (ambient +5dBA) | 54.9 | 75.9 | 68.7 | 75.9 | 76.1 | 54.8 |
| **Significant before Mitigation?** | **yes** | **no** | **yes** | **no** | **no** | **yes** |
| Reduction Provided by Mitigation | 21 | N/A | 15 | N/A | N/A | 3 |
| Mitigated Maximum Combined Noise Levels | 52.7 | | 60.1 | | | 54.7 |
| **Significant with Mitigation?** | **no** | | **no** | | | **no** |

## Project: 2311 N Hollywood Way

**Construction Noise Impact on Sensitive Receptors**

***Parameters***

| | | |
|---|---|---|
| **Construction Hours:** | 8 | Daytime hours (7 am to 7 pm) |
| | 0 | Evening hours (7 pm to 10 pm) |
| | 0 | Nighttime hours (10 pm to 7 am) |
| **Leq to L10 factor** | 3 | |

| ***Construction Phase*** **Equipment Type** | **No. of Equip.** | **Reference Noise Level at 50ft, Lmax** | **Acoustical Usage Factor** |
|---|---|---|---|
| ***Demolition*** | | | |
| Tractor/Loader/Backhoe | 1 | 80 | 25% |
| Excavator | 2 | 81 | 40% |
| Dump Truck | 1 | 84 | 40% |
| Vacuum Street Sweeper | 1 | 82 | 10% |
| ***Site Preparation*** | | | |
| Tractor/Loader/Backhoe | 1 | 80 | 25% |
| Excavator | 1 | 81 | 40% |
| Vacuum Street Sweeper | 1 | 82 | 10% |
| ***Grading/Excavation*** | | | |
| Compactor (ground) | 1 | 83 | 20% |
| Excavator | 1 | 81 | 40% |
| Dump Truck | 1 | 84 | 40% |
| Rubber Tired Loader | 2 | 79 | 40% |
| Scrapers | 1 | 84 | 40% |
| Vacuum Street Sweeper | 1 | 82 | 10% |
| ***Drainage/Utilities/Trenching*** | | | |
| Tractor/Loader/Backhoe | 1 | 80 | 25% |
| Concrete Saw | 1 | 90 | 20% |
| Forklift | 1 | 75 | 10% |
| Generator Sets | 1 | 81 | 50% |
| Vacuum Street Sweeper | 1 | 82 | 10% |
| Other Equipment | 1 | 85 | 50% |
| ***Foundations/Concrete Pour*** | | | |
| Cement and Mortar Mixers | 9 | 79 | 40% |
| Cement and Mortar Mixers | 10 | 79 | 40% |
| Cement and Mortar Mixers | 9 | 79 | 40% |
| Cranes | 2 | 81 | 16% |
| Forklift | 1 | 75 | 10% |
| Generator Sets | 1 | 81 | 50% |
| Front End Loader | 1 | 79 | 40% |
| Vacuum Street Sweeper | 1 | 82 | 10% |
| ***Building Construction*** | | | |
| Cement and Mortar Mixers | 1 | 79 | 40% |
| Cranes | 2 | 81 | 16% |
| Forklift | 1 | 75 | 10% |
| Generator Sets | 2 | 81 | 50% |
| Front End Loader | 1 | 79 | 40% |
| Vacuum Street Sweeper | 1 | 82 | 10% |
| ***Architectural Coating*** | | | |
| Air Compressor | 3 | 78 | 40% |
| Vacuum Street Sweeper | 1 | 82 | 10% |
| ***Paving*** | | | |
| Vacuum Street Sweeper | 1 | 82 | 10% |
| ***Landscaping*** | | | |
| Rubber Tired Loader | 1 | 79 | 40% |
| Front End Loader | 1 | 79 | 40% |
| Vacuum Street Sweeper | 1 | 82 | 10% |

### Overlapping Phase Noise Levels

Paving + Architectural Coating
Paving + Landscaping
**Maximum Combined Noise Levels**
Source for Ref. Noise Levels: LA CEQA Guides, 2006 & FHWA RCNM, 2005

Ambient Noise Level (Leq)
Threshold (ambient +5dBA)
**Significant before Mitigation?**
Reduction Provided by Mitigation
Mitigated Maximum Combined Noise Levels
**Significant with Mitigation?**

## TRAFFIC NOISE ANALYSIS TOOL

**Project Name:** 2311 N Hollywood
**Analysis Scenario:** Construction
**Source of Traffic Volumes:** Applicant, CalEEMod

| Roadway Segment | Ground Type | Distance from Roadway to Receiver (feet) | Speed (mph) | | | Peak Hour Volume | | | Peak Hour Noise Level (Leq(h) dBA) | Noise Level dBA CNEL |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Auto | MT | HT | Auto | MT | HT | | |
| Demolition | Hard | 50 | 35 | 35 | 35 | 40 | 0 | 4 | 54.1 | 54.4 |
| Site Preparation | Hard | 50 | 35 | 35 | 35 | 30 | 0 | 1 | 50.5 | 50.8 |
| Grading | Hard | 50 | 35 | 35 | 35 | 30 | 0 | 12 | 57.5 | 57.8 |
| Drainage/Utilities/Trenching | Hard | 50 | 35 | 35 | 35 | 30 | 0 | 1 | 50.5 | 50.8 |
| Foundations/Concrete Pour | Hard | 50 | 35 | 35 | 35 | 100 | 0 | 3 | 55.5 | 55.8 |
| Building Construction | Hard | 50 | 35 | 35 | 35 | 200 | 0 | 1 | 57.1 | 57.4 |
| Paving | Hard | 50 | 35 | 35 | 35 | 30 | 0 | 1 | 50.5 | 50.8 |
| Architectural Coating | Hard | 50 | 35 | 35 | 35 | 150 | 0 | 1 | 56.0 | 56.3 |
| Landscaping | Hard | 50 | 35 | 35 | 35 | 40 | 0 | 1 | 51.3 | 51.6 |
| Off-Site | Hard | 59 | 35 | 35 | 35 | 40 | 0 | 1 | 50.6 | 50.9 |

Model Notes:
The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.
Noise propagation greater than 50 feet is based on the following assumptions:
    For hard ground, the propagation rate is 3 dB per doubling the distance.
    For soft ground, the propagation rate is 4.5 dB per doubling the distance.
Vehicles are assumed to be on a long straight roadway with cruise speed.
Roadway grade is less than 1.5%.
CNEL levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

## TRAFFIC NOISE ANALYSIS TOOL

**Project Name:** 2311 N Hollywood
**Analysis Scenario:** Existing
**Source of Traffic Volumes:** Gibson Transportation Consulting, Inc

| Roadway Segment | Ground Type | Distance from Roadway to Receiver (feet) | Speed (mph) | | | Peak Hour Volume | | | Peak Hour Noise Level (Leq(h) dBA) | Noise Level dBA CNEL |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Auto | MT | HT | Auto | MT | HT | | |
| Hollywood Way between Winona Ave and Thornton Ave | Hard | 50 | 40 | 40 | 40 | 2928 | 30 | 60 | 71.5 | 71.8 |
| Hollywood Way between Thornton Ave and Avon St | Hard | 50 | 40 | 40 | 40 | 2747 | 28 | 57 | 71.2 | 71.5 |
| Hollywood Way between Avon St and Vanowen St | Hard | 50 | 40 | 40 | 40 | 1285 | 13 | 26 | 67.9 | 68.2 |
| Hollywood Way between Vanowen St and Valhalla Dr | Hard | 50 | 35 | 35 | 35 | 1508 | 16 | 31 | 67.1 | 67.4 |
| Hollywood Way between Valhalla Dr and Victory Blvd | Hard | 50 | 35 | 35 | 35 | 2416 | 25 | 50 | 69.1 | 69.4 |
| Hollywood Way between Victory Blvd and Burbank Blvd | Hard | 50 | 40 | 40 | 40 | 1739 | 18 | 36 | 69.2 | 69.5 |
| Buena Vista St between Victory Pl and Empire Ave | Hard | 50 | 40 | 40 | 40 | 1759 | 18 | 36 | 69.3 | 69.6 |
| Buena Vista St between Empire Ave and Vanowen St | Hard | 50 | 40 | 40 | 40 | 2932 | 30 | 60 | 71.5 | 71.8 |
| Buena Vista St between Vanowen St and Victory Blvd | Hard | 50 | 40 | 40 | 40 | 2741 | 28 | 57 | 71.2 | 71.5 |
| Buena Vista St s/o Victory Blvd | Hard | 50 | 40 | 40 | 40 | 2538 | 26 | 52 | 70.9 | 71.2 |
| Thornton Ave e/o Hollywood Way | Hard | 50 | 40 | 40 | 40 | 757 | 8 | 16 | 65.6 | 65.9 |
| Empire Ave w/o Buena Vista St | Hard | 50 | 45 | 45 | 45 | 1007 | 10 | 21 | 68.3 | 68.6 |
| Empire Ave e/o Buena Vista St | Hard | 50 | 45 | 45 | 45 | 1507 | 16 | 31 | 70.0 | 70.3 |
| Vanowen St between Clybourn Ave and N Hollywood Way | Hard | 50 | 45 | 45 | 45 | 1548 | 16 | 32 | 70.1 | 70.4 |
| Vanowen St between N Hollywood Way and Buena Vista St | Hard | 50 | 45 | 45 | 45 | 1405 | 14 | 29 | 69.7 | 70.0 |
| Valhalla Dr between Project Driveway and N Hollywood Way | Hard | 50 | 45 | 45 | 45 | 122 | 1 | 3 | 59.1 | 59.4 |
| Victory Blvd w/o Hollywood Way | Hard | 50 | 45 | 45 | 45 | 2039 | 21 | 42 | 71.3 | 71.6 |
| Victory Blvd between Hollywood Way and Buena Vista St | Hard | 50 | 45 | 45 | 45 | 1816 | 19 | 37 | 70.8 | 71.1 |
| Victory Blvd e/o Buena Vista St | Hard | 50 | 35 | 35 | 35 | 1547 | 16 | 32 | 67.2 | 67.5 |
| Burbank Blvd w/o Hollywood Blvd | Hard | 50 | 35 | 35 | 35 | 1546 | 16 | 32 | 67.2 | 67.5 |
| Burbank Blvd e/o Hollywood Blvd | Hard | 50 | 35 | 35 | 35 | 1630 | 17 | 34 | 67.4 | 67.7 |

Model Notes:
The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.
Noise propagation greater than 50 feet is based on the following assumptions:
- For hard ground, the propagation rate is 3 dB per doubling the distance.
- For soft ground, the propagation rate is 4.5 dB per doubling the distance.

Vehicles are assumed to be on a long straight roadway with cruise speed.
Roadway grade is less than 1.5%.
CNEL levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

## TRAFFIC NOISE ANALYSIS TOOL

**Project Name:** 2311 N Hollywood
**Analysis Scenario:** Existing + Project
**Source of Traffic Volumes:** Gibson Transportation Consulting, Inc

| Roadway Segment | Ground Type | Distance from Roadway to Receiver (feet) | Speed (mph) | | | Peak Hour Volume | | | Peak Hour Noise Level (Leq(h) dBA) | Noise Level dBA CNEL |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Auto | MT | HT | Auto | MT | HT | | |
| Hollywood Way between Winona Ave and Thornton Ave | Hard | 50 | 40 | 40 | 40 | 2998 | 31 | 62 | 71.6 | 71.9 |
| Hollywood Way between Thornton Ave and Avon St | Hard | 50 | 40 | 40 | 40 | 2816 | 29 | 58 | 71.3 | 71.6 |
| Hollywood Way between Avon St and Vanowen St | Hard | 50 | 40 | 40 | 40 | 1318 | 14 | 27 | 68.0 | 68.3 |
| Hollywood Way between Vanowen St and Valhalla Dr | Hard | 50 | 35 | 35 | 35 | 1586 | 16 | 33 | 67.3 | 67.6 |
| Hollywood Way between Valhalla Dr and Victory Blvd | Hard | 50 | 35 | 35 | 35 | 2517 | 26 | 52 | 69.3 | 69.6 |
| Hollywood Way between Victory Blvd and Burbank Blvd | Hard | 50 | 40 | 40 | 40 | 1827 | 19 | 38 | 69.4 | 69.7 |
| Buena Vista St between Victory Pl and Empire Ave | Hard | 50 | 40 | 40 | 40 | 1766 | 18 | 36 | 69.3 | 69.6 |
| Buena Vista St between Empire Ave and Vanowen St | Hard | 50 | 40 | 40 | 40 | 3007 | 31 | 62 | 71.6 | 71.9 |
| Buena Vista St between Vanowen St and Victory Blvd | Hard | 50 | 40 | 40 | 40 | 2777 | 29 | 57 | 71.3 | 71.6 |
| Buena Vista St s/o Victory Blvd | Hard | 50 | 40 | 40 | 40 | 2552 | 26 | 53 | 70.9 | 71.2 |
| Thornton Ave e/o Hollywood Way | Hard | 50 | 40 | 40 | 40 | 757 | 8 | 16 | 65.6 | 65.9 |
| Empire Ave w/o Buena Vista St | Hard | 50 | 45 | 45 | 45 | 1007 | 10 | 21 | 68.3 | 68.6 |
| Empire Ave e/o Buena Vista St | Hard | 50 | 45 | 45 | 45 | 1552 | 16 | 32 | 70.2 | 70.5 |
| Vanowen St between Clybourn Ave and N Hollywood Way | Hard | 50 | 45 | 45 | 45 | 1642 | 17 | 34 | 70.4 | 70.7 |
| Vanowen St between N Hollywood Way and Buena Vista St | Hard | 50 | 45 | 45 | 45 | 1474 | 15 | 30 | 69.9 | 70.2 |
| Valhalla Dr between Project Driveway and N Hollywood Way | Hard | 50 | 45 | 45 | 45 | 122 | 1 | 3 | 59.1 | 59.4 |
| Victory Blvd w/o Hollywood Way | Hard | 50 | 45 | 45 | 45 | 2056 | 21 | 42 | 71.4 | 71.7 |
| Victory Blvd between Hollywood Way and Buena Vista St | Hard | 50 | 45 | 45 | 45 | 1810 | 19 | 37 | 70.8 | 71.1 |
| Victory Blvd e/o Buena Vista St | Hard | 50 | 35 | 35 | 35 | 1563 | 16 | 32 | 67.2 | 67.5 |
| Burbank Blvd w/o Hollywood Blvd | Hard | 50 | 35 | 35 | 35 | 1599 | 16 | 33 | 67.3 | 67.6 |
| Burbank Blvd e/o Hollywood Blvd | Hard | 50 | 35 | 35 | 35 | 1648 | 17 | 34 | 67.5 | 67.8 |

Model Notes:
The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.
Noise propagation greater than 50 feet is based on the following assumptions:
- For hard ground, the propagation rate is 3 dB per doubling the distance.
- For soft ground, the propagation rate is 4.5 dB per doubling the distance.

Vehicles are assumed to be on a long straight roadway with cruise speed.
Roadway grade is less than 1.5%.
CNEL levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

## TRAFFIC NOISE ANALYSIS TOOL

**Project Name:** 2311 N Hollywood
**Analysis Scenario:** Future
**Source of Traffic Volumes:** Gibson Transportation Consulting, Inc

| Roadway Segment | Ground Type | Distance from Roadway to Receiver (feet) | Speed (mph) | | | Peak Hour Volume | | | Peak Hour Noise Level (Leq(h) dBA) | Noise Level dBA CNEL |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Auto | MT | HT | Auto | MT | HT | | |
| Hollywood Way between Winona Ave and Thornton Ave | Hard | 50 | 40 | 40 | 40 | 3528 | 36 | 73 | 72.3 | 72.6 |
| Hollywood Way between Thornton Ave and Avon St | Hard | 50 | 40 | 40 | 40 | 3425 | 35 | 71 | 72.2 | 72.5 |
| Hollywood Way between Avon St and Vanowen St | Hard | 50 | 40 | 40 | 40 | 1449 | 15 | 30 | 68.4 | 68.7 |
| Hollywood Way between Vanowen St and Valhalla Dr | Hard | 50 | 35 | 35 | 35 | 1686 | 17 | 35 | 67.6 | 67.9 |
| Hollywood Way between Valhalla Dr and Victory Blvd | Hard | 50 | 35 | 35 | 35 | 2737 | 28 | 56 | 69.7 | 70.0 |
| Hollywood Way between Victory Blvd and Burbank Blvd | Hard | 50 | 40 | 40 | 40 | 1981 | 20 | 41 | 69.8 | 70.1 |
| Buena Vista St between Victory Pl and Empire Ave | Hard | 50 | 40 | 40 | 40 | 1874 | 19 | 39 | 69.5 | 69.8 |
| Buena Vista St between Empire Ave and Vanowen St | Hard | 50 | 40 | 40 | 40 | 3181 | 33 | 66 | 71.8 | 72.1 |
| Buena Vista St between Vanowen St and Victory Blvd | Hard | 50 | 40 | 40 | 40 | 2960 | 31 | 61 | 71.5 | 71.8 |
| Buena Vista St s/o Victory Blvd | Hard | 50 | 40 | 40 | 40 | 2660 | 27 | 55 | 71.1 | 71.4 |
| Thornton Ave e/o Hollywood Way | Hard | 50 | 40 | 40 | 40 | 442 | 5 | 9 | 63.3 | 63.6 |
| Empire Ave w/o Buena Vista St | Hard | 50 | 45 | 45 | 45 | 959 | 10 | 20 | 68.1 | 68.4 |
| Empire Ave e/o Buena Vista St | Hard | 50 | 45 | 45 | 45 | 1464 | 15 | 30 | 69.9 | 70.2 |
| Vanowen St between Clybourn Ave and N Hollywood Way | Hard | 50 | 45 | 45 | 45 | 1613 | 17 | 33 | 70.3 | 70.6 |
| Vanowen St between N Hollywood Way and Buena Vista St | Hard | 50 | 45 | 45 | 45 | 1466 | 15 | 30 | 69.9 | 70.2 |
| Valhalla Dr between Project Driveway and N Hollywood Way | Hard | 50 | 45 | 45 | 45 | 122 | 1 | 3 | 59.1 | 59.4 |
| Victory Blvd w/o Hollywood Way | Hard | 50 | 45 | 45 | 45 | 2244 | 23 | 46 | 71.8 | 72.1 |
| Victory Blvd between Hollywood Way and Buena Vista St | Hard | 50 | 45 | 45 | 45 | 1973 | 20 | 41 | 71.2 | 71.5 |
| Victory Blvd e/o Buena Vista St | Hard | 50 | 35 | 35 | 35 | 1602 | 17 | 33 | 67.3 | 67.6 |
| Burbank Blvd w/o Hollywood Blvd | Hard | 50 | 35 | 35 | 35 | 1624 | 17 | 33 | 67.4 | 67.7 |
| Burbank Blvd e/o Hollywood Blvd | Hard | 50 | 35 | 35 | 35 | 1695 | 17 | 35 | 67.6 | 67.9 |

Model Notes:
The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.
Noise propagation greater than 50 feet is based on the following assumptions:
For hard ground, the propagation rate is 3 dB per doubling the distance.
For soft ground, the propagation rate is 4.5 dB per doubling the distance.
Vehicles are assumed to be on a long straight roadway with cruise speed.
Roadway grade is less than 1.5%.
CNEL levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

## TRAFFIC NOISE ANALYSIS TOOL

**Project Name:** 2311 N Hollywood
**Analysis Scenario:** Future + Project
**Source of Traffic Volumes:** Gibson Transportation Consulting, Inc

| Roadway Segment | Ground Type | Distance from Roadway to Receiver (feet) | Speed (mph) | | | Peak Hour Volume | | | Peak Hour Noise Level (Leq(h) dBA) | Noise Level dBA CNEL |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Auto | MT | HT | Auto | MT | HT | | |
| Hollywood Way between Winona Ave and Thornton Ave | Hard | 50 | 40 | 40 | 40 | 3598 | 37 | 74 | 72.4 | 72.7 |
| Hollywood Way between Thornton Ave and Avon St | Hard | 50 | 40 | 40 | 40 | 3495 | 36 | 72 | 72.3 | 72.6 |
| Hollywood Way between Avon St and Vanowen St | Hard | 50 | 40 | 40 | 40 | 1483 | 15 | 31 | 68.5 | 68.8 |
| Hollywood Way between Vanowen St and Valhalla Dr | Hard | 50 | 35 | 35 | 35 | 1764 | 18 | 36 | 67.8 | 68.1 |
| Hollywood Way between Valhalla Dr and Victory Blvd | Hard | 50 | 35 | 35 | 35 | 2838 | 29 | 59 | 69.8 | 70.1 |
| Hollywood Way between Victory Blvd and Burbank Blvd | Hard | 50 | 40 | 40 | 40 | 2069 | 21 | 43 | 70.0 | 70.3 |
| Buena Vista St between Victory Pl and Empire Ave | Hard | 50 | 40 | 40 | 40 | 1881 | 19 | 39 | 69.6 | 69.9 |
| Buena Vista St between Empire Ave and Vanowen St | Hard | 50 | 40 | 40 | 40 | 3256 | 34 | 67 | 71.9 | 72.2 |
| Buena Vista St between Vanowen St and Victory Blvd | Hard | 50 | 40 | 40 | 40 | 2995 | 31 | 62 | 71.6 | 71.9 |
| Buena Vista St s/o Victory Blvd | Hard | 50 | 40 | 40 | 40 | 2675 | 28 | 55 | 71.1 | 71.4 |
| Thornton Ave e/o Hollywood Way | Hard | 50 | 40 | 40 | 40 | 442 | 5 | 9 | 63.3 | 63.6 |
| Empire Ave w/o Buena Vista St | Hard | 50 | 45 | 45 | 45 | 959 | 10 | 20 | 68.1 | 68.4 |
| Empire Ave e/o Buena Vista St | Hard | 50 | 45 | 45 | 45 | 1509 | 16 | 31 | 70.0 | 70.3 |
| Vanowen St between Clybourn Ave and N Hollywood Way | Hard | 50 | 45 | 45 | 45 | 1707 | 18 | 35 | 70.6 | 70.9 |
| Vanowen St between N Hollywood Way and Buena Vista St | Hard | 50 | 45 | 45 | 45 | 1535 | 16 | 32 | 70.1 | 70.4 |
| Valhalla Dr between Project Driveway and N Hollywood Way | Hard | 50 | 45 | 45 | 45 | 122 | 1 | 3 | 59.1 | 59.4 |
| Victory Blvd w/o Hollywood Way | Hard | 50 | 45 | 45 | 45 | 2262 | 23 | 47 | 71.8 | 72.1 |
| Victory Blvd between Hollywood Way and Buena Vista St | Hard | 50 | 45 | 45 | 45 | 1967 | 20 | 41 | 71.2 | 71.5 |
| Victory Blvd e/o Buena Vista St | Hard | 50 | 35 | 35 | 35 | 1617 | 17 | 33 | 67.4 | 67.7 |
| Burbank Blvd w/o Hollywood Blvd | Hard | 50 | 35 | 35 | 35 | 1677 | 17 | 35 | 67.5 | 67.8 |
| Burbank Blvd e/o Hollywood Blvd | Hard | 50 | 35 | 35 | 35 | 1713 | 18 | 35 | 67.6 | 67.9 |

Model Notes:
The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.
Noise propagation greater than 50 feet is based on the following assumptions:
- For hard ground, the propagation rate is 3 dB per doubling the distance.
- For soft ground, the propagation rate is 4.5 dB per doubling the distance.

Vehicles are assumed to be on a long straight roadway with cruise speed.
Roadway grade is less than 1.5%.
CNEL levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

**2311 N Hollyway**
**Parking Noise**
**Summary**

| Outdoor Space | Receptor | Estimated Leq | Existing Ambient | Ambient + Project | Threshold | Exceed? |
|---|---|---|---|---|---|---|
| Office Building | R1 | 34.4 | 49.9 | 50.0 | 54.9 | No |
| | R2 | 24.1 | 70.9 | 70.9 | 75.9 | No |
| | R3 | 36.3 | 63.7 | 63.7 | 68.7 | No |
| | R4 | 17.1 | 70.9 | 70.9 | 75.9 | No |
| | R5 | 15.2 | 71.1 | 71.1 | 76.1 | No |
| | R6 | 13.8 | 49.8 | 49.8 | 54.8 | No |
| Residential Building I | R1 | 18.1 | 49.9 | 49.9 | 54.9 | No |
| | R2 | 14.4 | 70.9 | 70.9 | 75.9 | No |
| | R3 | 18.3 | 63.7 | 63.7 | 68.7 | No |
| | R4 | 15.5 | 70.9 | 70.9 | 75.9 | No |
| | R5 | 30.1 | 71.1 | 71.1 | 76.1 | No |
| | R6 | 16.0 | 49.8 | 49.8 | 54.8 | No |
| Residential Building II | R1 | 25.4 | 49.9 | 49.9 | 54.9 | No |
| | R2 | 18.4 | 70.9 | 70.9 | 75.9 | No |
| | R3 | 36.7 | 63.7 | 63.7 | 68.7 | No |
| | R4 | 20.2 | 70.9 | 70.9 | 75.9 | No |
| | R5 | 16.1 | 71.1 | 71.1 | 76.1 | No |
| | R6 | 18.1 | 49.8 | 49.8 | 54.8 | No |
| Total Composite Parking | R1 | 35.0 | 49.9 | 50.0 | 54.9 | No |
| | R2 | 25.5 | 70.9 | 70.9 | 75.9 | No |
| | R3 | 39.6 | 63.7 | 63.7 | 68.7 | No |
| | R4 | 22.8 | 70.9 | 70.9 | 75.9 | No |
| | R5 | 30.4 | 71.1 | 71.1 | 76.1 | No |
| | R6 | 21.1 | 49.8 | 49.8 | 54.8 | No |

# Parking Related Noise Analysis

**Project Name: 2311 N Hollywood**

**Office Building**

| | | |
|---|---|---|
| Parking Spaces | 455 | trips |
| Leq | **53** | dBA |

**Residential Building I**

| | | |
|---|---|---|
| Parking Spaces | 543 | trips |
| Leq | **54** | dBA |

**Residential Building II**

| | | |
|---|---|---|
| Parking Spaces | 589 | trips |
| Leq | **54** | dBA |

Leq(h) = SELref + 10log(NA/1000) – 35.6

Where: Leq(h) = hourly Leq noise level at 50 feet

SELref (92 dBA SEL) = reference noise level for stationary noise source represented in sound exposure level (SEL) at 50 feet

NA = number of automobiles per hour

# Project: 2311 N Hollywood

## Parking - Office Building

| Receptor Location | R1 | |
|---|---|---|
| Parking - Office Building | 53.0 | dBA |
| Reference Distance | 50 | ft |
| Distance to R1 | 425 | ft |
| | **-19** | dBA |
| | 34.4 | dBA |
| Noise Reduction by Existing/Proposed Buildings | 0 | dBA |
| Noise Levels at R1 | **34.4** | dBA |

| Receptor Location | R2 | |
|---|---|---|
| Parking - Office Building | 53.0 | dBA |
| Reference Distance | 50 | ft |
| Distance to R2 | 780 | ft |
| | **-24** | dBA |
| | 29.1 | dBA |
| | | dBA |
| Noise Reduction by Existing/Proposed Buildings | 5 | dBA |
| Noise Levels at R2 | **24.1** | dBA |

| Receptor Location | R3 | |
|---|---|---|
| Parking - Office Building | 53.0 | dBA |
| Reference Distance | 50 | ft |
| Distance to R3 | 340 | ft |
| | **-17** | dBA |
| | 36.3 | dBA |
| | | dBA |
| Noise Reduction by Existing/Proposed Buildings | 0 | dBA |
| Noise Levels at R3 | **36.3** | dBA |

| Receptor Location | R4 | |
|---|---|---|
| Parking - Office Building | 53.0 | dBA |
| Reference Distance | 50 | ft |
| Distance to R4 | 985 | ft |
| | **-26** | dBA |
| | 27.1 | dBA |
| | | dBA |
| Noise Reduction by Existing/Proposed Buildings | 10 | dBA |
| Noise Levels at R4 | **17.1** | dBA |

| Receptor Location | R5 | |
|---|---|---|
| Parking - Office Building | 53.0 | dBA |
| Reference Distance | 50 | ft |
| Distance to R5 | 1230 | ft |
| | **-28** | dBA |
| | 25.2 | dBA |
| | | dBA |
| Noise Reduction by Existing/Proposed Buildings | 10 | dBA |
| Noise Levels at R5 | **15.2** | dBA |

| Receptor Location | R6 | |
|---|---|---|
| Parking - Office Building | 53.0 | dBA |
| Reference Distance | 50 | ft |
| Distance to R6 | 1440 | ft |
| | **-29** | dBA |
| | 23.8 | dBA |
| | | dBA |
| Noise Reduction by Existing/Proposed Buildings | 10 | dBA |
| Noise Levels at R6 | **13.8** | dBA |

# Project: 2311 N Hollywood

## Parking - Residential Building I

| Receptor Location | R1 | |
|---|---|---|
| Parking - Residential Building I | 53.7 | dBA |
| Reference Distance | 50 | ft |
| Distance to R1 | 960 | ft |
| | -26 | dBA |
| | 28.1 | dBA |
| Noise Reduction by | | |
| Existing/Proposed Buildings | 10 | dBA |
| Noise Levels at R1 | **18.1** | dBA |

| Receptor Location | R2 | |
|---|---|---|
| Parking - Residential Building I | 53.7 | dBA |
| Reference Distance | 50 | ft |
| Distance to R2 | 1465 | ft |
| | -29 | dBA |
| | 24.4 | dBA |
| | | dBA |
| Noise Reduction by | | |
| Existing/Proposed Buildings | 10 | dBA |
| Noise Levels at R2 | **14.4** | dBA |

| Receptor Location | R3 | |
|---|---|---|
| Parking - Residential Building I | 53.7 | dBA |
| Reference Distance | 50 | ft |
| Distance to R3 | 940 | ft |
| | -25 | dBA |
| | 28.3 | dBA |
| | | dBA |
| Noise Reduction by | | |
| Existing/Proposed Buildings | 10 | dBA |
| Noise Levels at R3 | **18.3** | dBA |

| Receptor Location | R4 | |
|---|---|---|
| Parking - Residential Building I | 53.7 | dBA |
| Reference Distance | 50 | ft |
| Distance to R4 | 1290 | ft |
| | -28 | dBA |
| | 25.5 | dBA |
| | | dBA |
| Noise Reduction by | | |
| Existing/Proposed Buildings | 10 | dBA |
| Noise Levels at R4 | **15.5** | dBA |

| Receptor Location | R5 | |
|---|---|---|
| Parking - Residential Building I | 53.7 | dBA |
| Reference Distance | 50 | ft |
| Distance to R5 | 760 | ft |
| | -24 | dBA |
| | 30.1 | dBA |
| | | dBA |
| Noise Reduction by | | |
| Existing/Proposed Buildings | 0 | dBA |
| Noise Levels at R5 | **30.1** | dBA |

| Receptor Location | R6 | |
|---|---|---|
| Parking - Residential Building I | 53.7 | dBA |
| Reference Distance | 50 | ft |
| Distance to R6 | 1225 | ft |
| | -28 | dBA |
| | 26.0 | dBA |
| | | dBA |
| Noise Reduction by | | |
| Existing/Proposed Buildings | 10 | dBA |
| Noise Levels at R6 | **16.0** | dBA |

# Project: 2311 N Hollywood

## Parking - Residential Building II

| Receptor Location | R1 | |
|---|---|---|
| Parking - Residential Building II | 54.1 | dBA |
| Reference Distance | 50 | ft |
| Distance to R1 | 769 | ft |
| | **-24** | dBA |
| | 30.4 | dBA |
| Noise Reduction by Existing/Proposed Buildings | 5 | dBA |
| Noise Levels at R1 | **25.4** | dBA |

| Receptor Location | R2 | |
|---|---|---|
| Parking - Residential Building II | 54.1 | dBA |
| Reference Distance | 50 | ft |
| Distance to R2 | 960 | ft |
| | **-26** | dBA |
| | 28.4 | dBA |
| | | dBA |
| Noise Reduction by Existing/Proposed Buildings | 10 | dBA |
| Noise Levels at R2 | **18.4** | dBA |

| Receptor Location | R3 | |
|---|---|---|
| Parking - Residential Building II | 54.1 | dBA |
| Reference Distance | 50 | ft |
| Distance to R3 | 370 | ft |
| | **-17** | dBA |
| | 36.7 | dBA |
| | | dBA |
| Noise Reduction by Existing/Proposed Buildings | 0 | dBA |
| Noise Levels at R3 | **36.7** | dBA |

| Receptor Location | R4 | |
|---|---|---|
| Parking - Residential Building II | 54.1 | dBA |
| Reference Distance | 50 | ft |
| Distance to R4 | 780 | ft |
| | **-24** | dBA |
| | 30.2 | dBA |
| | | dBA |
| Noise Reduction by Existing/Proposed Buildings | 10 | dBA |
| Noise Levels at R4 | **20.2** | dBA |

| Receptor Location | R5 | |
|---|---|---|
| Parking - Residential Building II | 54.1 | dBA |
| Reference Distance | 50 | ft |
| Distance to R5 | 1260 | ft |
| | **-28** | dBA |
| | 26.1 | dBA |
| | | dBA |
| Noise Reduction by Existing/Proposed Buildings | 10 | dBA |
| Noise Levels at R5 | **16.1** | dBA |

| Receptor Location | R6 | |
|---|---|---|
| Parking - Residential Building II | 54.1 | dBA |
| Reference Distance | 50 | ft |
| Distance to R6 | 1000 | ft |
| | **-26** | dBA |
| | 28.1 | dBA |
| | | dBA |
| Noise Reduction by Existing/Proposed Buildings | 10 | dBA |
| Noise Levels at R6 | **18.1** | dBA |

# TRAFFIC NOISE ANALYSIS TOOL

**Project Name:** 2311 N Hollywood
**Analysis Scenario:** Future + Project - Impacts to On-Site Residential
**Source of Traffic Volumes:** Gibson Transportation Consulting, Inc

| Roadway Segment | | Ground Type | Distance from Roadway to Receiver (feet) | Speed (mph) | | | Peak Hour Volume | | | Noise Level dBA CNEL |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Auto | MT | HT | Auto | MT | HT | |
| **Hollywood Way between Vanowen St and Valhalla Dr** | | Hard | 50 | 35 | 35 | 35 | 1764 | 18 | 36 | 68.1 |
| | Buildings 1 and 2 | Hard | 60 | 35 | 35 | 35 | 1764 | 18 | 36 | 67.3 |
| | Live-Work Units | Hard | 60 | 35 | 35 | 35 | 1764 | 18 | 36 | 67.3 |
| | Live-Work Units | Hard | 75 | 35 | 35 | 35 | 1764 | 18 | 36 | 66.3 |
| | Townhome Units | Hard | 330 | 35 | 35 | 35 | 1764 | 18 | 36 | 59.9 |
| **Vanowen St between Clybourn Ave and N Hollywood Way** | | Hard | 50 | 45 | 45 | 45 | 1707 | 18 | 35 | 70.9 |
| | Building 1 | Hard | 60 | 45 | 45 | 45 | 1707 | 18 | 35 | 70.1 |
| | Live-Work Units | Hard | 60 | 45 | 45 | 45 | 1707 | 18 | 35 | 70.1 |
| | Live-Work Units | Hard | 75 | 45 | 45 | 45 | 1707 | 18 | 35 | 69.1 |
| | Townhome Units | Hard | 60 | 45 | 45 | 45 | 1707 | 18 | 35 | 70.1 |
| | Townhome Units | Hard | 100 | 45 | 45 | 45 | 1707 | 18 | 35 | 67.9 |
| **Valhalla Dr between Project Driveway and N Hollywood Way** | | Hard | 50 | 45 | 45 | 45 | 122 | 1 | 3 | 59.4 |
| | Building 2 | Hard | 30 | 45 | 45 | 45 | 122 | 1 | 3 | 61.6 |

Model Notes:
The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).
The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.
Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.
Noise propagation greater than 50 feet is based on the following assumptions:
- For hard ground, the propagation rate is 3 dB per doubling the distance.
- For soft ground, the propagation rate is 4.5 dB per doubling the distance.

Vehicles are assumed to be on a long straight roadway with cruise speed.
Roadway grade is less than 1.5%.
CNEL levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

| Source | # of Trains/day | # of Trains/night | Speed (mph) | Average Engines/Train | Average Cars/Train | Engines | | | Train Cars | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Daytime ($L_d$) | Nighttime ($L_n$) | CNEL ($L_{dn}$) | Daytime ($L_d$) | Nighttime ($L_n$) | CNEL ($L_{dn}$) | Combined Total ($L_{dn}$) @50 ft | Distance to Receptor (ft) | Noise Level at Receptor ( $L_{dn}$) |
| Freight | 2 | 4 | 40 | 2 | 40 | 38.9 | 46.3 | 52.2 | 40.0 | 47.4 | 53.3 | 55.8 | 100.0 | 51.3 |
| Commuter | 34 | 11 | 79 | 1 | 6 | 48.2 | 47.7 | 54.2 | 49.9 | 49.5 | 56.0 | 58.2 | 100.0 | 53.7 |
| Total | | | | | | 48.7 | 50.1 | 56.3 | 50.4 | 51.6 | 57.8 | 60.2 | - | 55.6 |

Assumptions:

1. Assumes 6 freight trains per 24-hr. 2 during daytime hours and 4 during nighttime

2. Assumes 45 commuter trains per day, 34 during daytime and 11 during nighttime per Amtrak and Metrolink schedules

3. Average trains per car calculated using data from railway monitoring logs

4. Speeds taken from the City of Burbank's Quiet Zone Study

**Project Name: 2311 N Hollywood**

**On-Site Combined Noise Level**

| | Traffic | Aircraft | Train | Combined Noise |
|---|---|---|---|---|
| Building 1 (Fronting N Hollywood) | 71.9 | 64.8 | 52.8 | 72.7 |
| Building 2 (Fronting N Hollywood) | 68.3 | 64.8 | - | 69.9 |
| Townhome Units | 70.5 | 65.5 | 55.7 | 71.8 |
| Live-Work Units | 71.9 | 64.8 | 53.8 | 72.7 |